INVESTIGATION INTO ANONYMOUS ALLEGATIONS RAISED AT ENERGY NORTHWEST COLUMBIA GENERATING STATION

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INTRODUCTION

A. Scope and Protocol

This report responds to issues identified in four anonymous letters sent to some members of the EN Executive Board. The letters' authors stated that they are Energy Northwest ("EN") Employees. Letter 1 and Letter 2 were received in January 2016 and identified a number of claims alleging declining performance at the Columbia Generating Station ("CGS") and a lack of transparency on behalf of senior plant management in communicating this declining performance to employees, the Energy Northwest governing boards, and the public. Letter 3 was received on April 21, 2016. Letter 3 provided the anonymous alleger's response to this investigation's preliminary findings, which were presented to Energy Northwest employees by two Executive Board members during "all-hands" employee briefings the week prior. In some instances, Letter 3 expanded on the initial allegations identified in Letters 1 and 2. Letter 4 was received on May 16, 2016. Letter 4 raises two new allegations: (1) Prior to the March 2016 briefing to the Executive Board on Pillsbury's investigation findings, the CNO received a draft copy of Pillsbury's investigation report before it was sent to Executive Board members; and (2) the allegers have "heard" that the CNO has made multiple threats against the anonymous letter writers, including discovering their identities and suing them for libel.

Upon receipt of Letters 1 and 2, the EN Executive Board issued a request for proposal seeking a qualified law firm to conduct a thorough independent investigation into the claims raised in the initial two letters. The EN Executive Board selected Pillsbury Winthrop Shaw Pittman (Pillsbury) as independent, outside counsel to conduct this investigation based on its extensive experience in nuclear related matters and its independence from the EN organization. The assessment team was led by Daryl Shapiro, a Pillsbury Partner with more than 20 years of experience working in safety culture related issues, including assessments, investigations, and training. The assessment team included Pillsbury Partner Jeff Merrifield, who served two terms as a Commissioner on the Nuclear Regulatory Commission ("NRC") and eight years as a senior executive for a nuclear supplier prior to joining Pillsbury in 2015. The team also included Timothy Walsh, a Pillsbury Special Counsel with over 12 years of legal experience in NRC-related matters, including independent investigations, NRC enforcement matters, and nuclear work environment assessments; and Kimberly Harshaw, a Pillsbury Counsel with over 20 years of experience in the nuclear industry including experience in independent investigations and NRC enforcement matters, as well as experience working at nuclear utilities as an engineer, reactor operator, and manager.

Pillsbury reviewed the first two letters submitted to the Board and identified that the letters raise six specific Allegations (with the first Allegation composed of three subparts), and one general Allegation concerning safety conscious work environment ("SCWE") – the willingness of plant employees to raise concerns without fear of retaliation. As stated, in some instances Letter 3 provided additional information supporting the initial six allegations.

The six specific Allegations raised in the Letter 1 and 2 are summarized as follows:

- Allegation 1: CGS performance has been declining, and that decline in performance has been hidden from the public and site personnel

- Allegation 1A: Performance is being hidden from the public and staff. Senior Management are communicating that CGS is an excellent performing plant, but industry performance measures tell a different story.

- Allegation 1B: Performance has steadily declined, as measured by the CGS Index, and will be among the worst performers in the U.S. Other measures, such as reliability, equipment health, radiation protection, and human performance events also show a decline in performance. The CGS capability factor as of November 2015, shows that CGS is 91st out of 99 based on a 12 month capability factor. And CGS stayed online for a two-year period, but did not meet our generation targets. The "equipment reliability index" is the second lowest or lowest score in the entire nuclear industry.

- Allegation 1C: On December 14, 2015, the CEO and CNO told all employees that the fuel leaks caused the CGS Index to enter the 4th Quartile as of November 2015. The Concerned Individuals believe that CGS entered 4th Quartile much earlier and that this information is being suppressed so CGS can stay in the "sustaining excellence phase"

- Allegation 2: Management is making decisions to stay on-line at all costs. In particular, Senior Management made the decision to fix a huge valve while the plant was stuck at 50% power. The Concerned Individuals allege that the Engineering VP stated that this repair was the most likely cause of the fuel leak.

- Allegation 3: After an industrial safety accident at the Industrial Development Complex, the safety measure was changed from "millions" of hours without a lost time accident at Energy Northwest to "millions" of hours without a lost time accident at Columbia Generating Station. Also, lessons learned were not shared from the cited safety accident. In addition, a supervisor at CGS slipped and fell and sustained an injury recently.

- Allegation 4: The CEO and CNO are rarely on site spending much of their time traveling. During the last outage, the CNO was in town for only 19 days out of 51 outage days, and took trips across the country. Similar attendance is suspected of the CEO.

- Allegation 5: The CEO calendar was blocked at the time of Letter 1 and the CNO has since blocked access to his calendar.

- Allegation 6: The Board should ask the company about the NRC Investigation into an incident involving willful inattentiveness by security officers that led to a fine and settlement, and also a security officer found to be involved in a geocaching game while on duty.

The general SCWE Allegation is inferred from the following statements in Letters 1 and 2:

- Letter No. 1: We are sending this [letter] anonymously because we are concerned about retaliation if discovered.

- Letter No. 2: We then have to select yes or no to request permission [to view the CNO's calendar], which would expose us to discovery and retaliation.

These two statements indicate that the concerned individuals believe they will suffer retaliation for raising concerns. This raises the question of whether a chilled work environment exists at CGS, or in any particular department(s) of CGS.

This report addresses the "Phase I" investigation into the six specific allegations raised in Letters 1 and 2, as well as the additional information raised in Letters 3 and 4. The SCWE allegation will be evaluated and reported on in Phase II (for which field work is currently underway).

The investigation into the six specific allegations was completed using a series of structured interview protocols and review of hundreds of documents totaling thousands of pages. The investigation team developed the interview protocols based on the information contained in the allegations, the individuals to be interviewed for each allegation, and the team members' experience conducting investigations and in nuclear matters generally. The investigation team interviewed nearly 50 individuals for the investigation into the six specific allegations at CGS during February 16-18 and 22-23, 2016, or by telephone the following week: 20 Individual Contributors, 12 Department Managers, 6 Executive Team Members (including the CEO and CNO), and 1 External Stakeholder. In addition, the investigation team conducted multiple follow-up interviews in February and March 2015 by telephone as they reviewed documents and initial interview notes.

This Phase I investigation report was nearing completion when Letter 3 was received. Pillsbury conducted additional fact gathering to address the additional information contained in Letter 3. This involved additional follow-up interviews (by phone and in person) with individuals previously interviewed, as well as first interviews with additional EN personnel. In addition, upon receipt of Letter 4, the CNO was interviewed again.

Two members of the EN Legal Services Department (Executive Assistant and Legal Assistant) provided assistance to the investigation team in scheduling interviews and collecting documents. Both were directed by Energy Northwest General Counsel to work independent of the General Counsel and the Legal Services organization in this regard.

The Investigation included review of hundreds of pages of documents, including CGS Monthly Business Plans, Monthly Department Meetings, CNO Executive Board Presentations, Action Requests, CGS Procedures, EN Newsletter articles, and "Daily 15" briefing summaries.

B. Executive Summary of Investigation Findings & Recommendations

The following is a short summary of the Phase I investigation findings and recommendations. Each allegation's findings and recommendations are summarized in greater detail in the section of this report where that allegation is addressed.

Allegation 1 (Including Sub-allegations 1A, 1B, and 1C)

Findings: The investigation found that, overall, senior plant management has generally been transparent with CGS personnel and the EN governing Boards with respect to CGS's

performance, including the decline in some (but not all) of CGS's performance indicators. The investigation confirmed that performance has declined in those measures identified in the concerns and that decline has been communicated to employees and the Board. In those areas of declining performance, the site has developed and is implementing corrective actions to address that performance.

The investigation did not substantiate that on December 14th the CEO and CNO told all employees that the recently confirmed fuel defects caused CGS to enter the fourth quartile for the CGS Index as of November 2015. Employees had been told months earlier in monthly department meetings that the CGS Index was in 4th Quartile. The plant's 4th Quartile status was also documented in the monthly Business Plan.

However, there has been inconsistent communication regarding CGS's performance. Senior management told the Executive Board that the CGS Index was in 3rd Quartile until its December 2015 meeting. This resulted from use of industry quartile thresholds from a different time period than were used in the Business Plan. While Pillsbury did not find that the senior plant management attempted to deliberately hide performance issues or mislead employees and the Executive Board, the use of incorrect data as a threshold should not have occurred. The CNO failed to ensure that accurate threshold data was used in the Executive Board presentations. This mistake was carried forward, and other senior management members, including the CEO, failed to catch the mistake. It was not identified and corrected until employees brought the issue forward in December 2015.

Pillsbury Recommendation: Presentation of performance data needs to clear and beyond reproach. Using different thresholds for different purposes is confusing and can create the impression that CGS/EN is misleading stakeholders. Performance data communications should be aligned so that all stake holders receive consistent and clear information.

A Global Recommendation is that CGS produce an employee communication acknowledging the investigation, thanking all who participated, and reviewing results and recommendations. We recommend that this be done as a joint communication from the Board and Senior Management.

Allegation 2

Pillsbury Findings: The investigation found that CGS Management made a decision to complete a repair on a valve at power after a thorough analysis of the nuclear and industrial safety risk of performing that work. Management evaluated other options, and the chosen option was thoroughly vetted through multiple challenge boards. Management addressed concerns raised with the chosen approach by changing design, developing mitigation plans, and practicing on full scale mockup. Management communicated this process along the way with employees and solicited employee views, and also communicated on this issue to the Board. The plant developed a Case Study on the decision making process and presented it in Leadership Training, and scheduled it to be presented in Engineering Training.

The cause of the fuel defects is unknown at this time, and indeed, may never be known. CGS's investigation concluded that it is likely due to debris introduced during outage work, but not necessarily the valve repair. Other work performed during the outage could have caused it such

as the extensive repair work on the Reactor Water Cleanup System and use of the High Pressure Core Spray system to flood up the reactor. The plant may not know the exact cause until the next outage, if cause can be determined at all. The site has taken action to safely manage the fuel defects.

Pillsbury Recommendations: The Case Study should be presented to a wider employee audience at level appropriate to the audience. In addition, the site should reinforce the decision-making process used to evaluate and select option for valve repair and the mitigating actions taken to address foreign material intrusion concerns.

Allegation 3

Pillsbury Findings: The industrial safety accident and lessons learned were communicated to employees. The event was entered into CGS' corrective action program along with the contractor's investigation report. The lessons learned were discussed at the "Daily 15" or "D15" daily briefing conducted by each work group. The lessons learned were shared in an Energy Northwest News article published by the General Manager of Energy Services & Development ("ES&D") division. However, not all expectations and requirements were met. EN senior management did not immediately and appropriately notify the Executive Board of the accident. This level of accident should have resulted in the prompt and full notification of the Executive Board. The "Daily 15" and EN Newsletter article could have been sooner. In addition, the ES&D Department Clock Reset was not distributed by the Human Performance Department.

The CEO's communications on lost time accidents were changed to CGS-specific from EN-wide prior to the accident in the Industrial Development Complex. In addition, the accident was not an OSHA recordable or a lost-time accident against Energy Northwest pursuant to OSHA regulations; it was recordable against the contractor. Notwithstanding the fact that the accident was not recordable against Energy Northwest, personnel debated whether the accident counted as a lost time accident. In addition, this incident has counted against Energy Northwest ES&D personnel's At Risk Compensation (meaning, it will negatively impact the portion of performance compensation for those EN employees who work for the non-nuclear side of EN) . The supervisor slip-and-fall accident was communicated to the site and employees through multiple avenues. As a general matter, Pillsbury did identify a tendency for senior management to highlight "good news" in public presentations regarding safety. These positive achievements should have been appropriately counterbalanced with, for example, emergent industrial safety incidents at CGS and ES&D.

Pillsbury Recommendations: Senior management should review the facts and circumstances of how EN handled the accident at the IDC and document identified shortfalls in the corrective action system, if appropriate. In addition, similar to Allegation 1, reporting and tracking data needs to be consistent and beyond reproach. The Executive Board should confirm its expectations regarding the types of industrial accidents that should be communicated to the Board of Directors, and how soon. These expectations should be reinforced with appropriate personnel. Lastly, safety data and At Risk Compensation incentives should be aligned. Internally and externally touting a strong safety record is inconsistent with internally counting an accident against performance compensation.

Allegation 4

Pillsbury Findings: The investigation did find that the CNO was on travel for part or all of 29 days of the 51-day outage (three days less than asserted in the allegation). All but three or four of his days on travel were for business reasons – industry meetings, EN Board meetings, meetings with banks. The investigation did not substantiate the allegation's suggestion that the CEO or CNO are not attentive to their CGS responsibilities while on travel. All senior management personnel interviewed stated that the CEO and CNO have always been available by phone and email when on travel. They are in regular contact. No one cited any example of being unable to reach either the CEO or CNO while they were on travel. In addition, the CNO regularly participated in daily outage calls. While Pillsbury did not substantiate that the CEO or CNO were inattentive to their duties during travel, the CNO should have exercised better judgment with respect to how often he was offsite during the outage.

Pillsbury Recommendations: The Board should confirm its expectations regarding the prioritization of the CEO's and CNO's external and internal responsibilities (particularly during critical path operations, such as an outage), and these expectations should be communicated to the site.

Allegation 5

Pillsbury Findings: Employees can view the CEO's Microsoft Outlook calendar. The details of each appointment on the CEO's Outlook calendar are not available for all employees to view (the details are available to some members of senior management to view). Following receipt of Letter 1, after discussing with the CEO the reasons why the details of his calendar appointments were hidden, the CNO set his calendar access permissions to match those of the CEO.

Pillsbury Recommendations: None, other than sharing the results of this independent investigation with employees. In light of the sensitive security, financial, personnel, and other matters handled by the CEO and CNO, limits on who has access to the specific details of the CEO and CNO's calendars is considered a standard practice in the nuclear industry.

Allegation 6

Pillsbury Findings: The company responded appropriately and promptly to the allegations concerning the security officers. The company immediately began investigating both incidents as soon as it was made aware of them, and took appropriate action. Corrective actions were documented in the corrective action system.

Senior management briefed the Executive Board on the inattentive security officer violations that resulted in a settlement with the NRC and a civil penalty. However, senior management did not brief the Executive Board on the geocaching incident because it believed it did not rise to the level of a matter to brief the Board. Given the potential for this event to have received widespread media attention, the failure to fully and currently inform the Executive Board regarding the incident was an error. CGS did communicate to employees via site-wide broadcast that geocaching is strictly prohibited on site.

Pillsbury Recommendations: Similar to Allegation 3, the Executive Board should confirm its expectations regarding the types of incidents that should be communicated to it, and how soon.

Letter 4 Allegations:

Pillsbury Findings: The CNO did not receive, and could not have received, a draft investigation report in March 2015 because no such draft report existed. A draft investigation report was first made available to members of the Executive Board Ad Hoc Subcommittee on Wednesday, May 18, 2016. The CNO vehemently denied that he has made threats to find, sue, or arrest the anonymous letter writers.

Pillsbury Recommendations: None, other than sharing the results of this independent investigation with employees.

Allegation 1: **CGS performance has been declining, and that decline in performance has been hidden from the public and site personnel**

Allegation 1A: Performance is being hidden from the public and staff. Senior Management are communicating that CGS is an excellent performing plant, but industry performance measures tell a different story.

Allegation 1B: Performance has steadily declined, as measured by the CGS Index, and will be among the worst performers in the U.S. Other measures, such as reliability, equipment health, radiation protection, and human performance events also show a decline in performance. The CGS capability factor as of November 2015, shows that CGS is 91st out of 99 based on a 12 month capability factor. And CGS stayed online for a two-year period, but did not meet our generation targets. The "equipment reliability index" is the second lowest or lowest score in the entire nuclear industry.

Allegation 1C: On December 14, 2015, the CEO and CNO told all employees that the fuel leaks caused CGS to enter the 4th Quartile as of November 2015. The Concerned Individuals believe that CGS entered 4th Quartile much earlier and that this information is being suppressed so CGS can stay in the "sustaining excellence phase."

Response to Allegation 1:

I. Summary

The investigation did not substantiate the allegation that CGS's performance is being hidden from CGS employees, the Energy Northwest governing boards,[1] or the public, or is otherwise being suppressed by senior plant management so that (as alleged in Letter 1) management can represent to employees and the public that the plant remains in Phase IV of the plant's excellence model, "sustaining excellence." The remainder of the allegation pertaining to decline in performance and entry into the fourth quartile on the CGS index is substantiated in part. The investigation found that, overall, senior plant management has communicated to CGS personnel and the governing boards information on CGS's performance, including the decline in some of CGS's performance indicators. It is true that a number of performance measures, including those mentioned in this allegation, show declining performance at CGS. The decline in those

[1] Energy Northwest has three governing boards: (1) The Executive Board is the 11 member governing body that oversees Energy Northwest's operations. It is composed of five member utility representatives from the broader Board of Directors, three gubernatorial appointees, and three public sector representatives selected by the Board of Directors; (2) the Board of Directors currently has 27 members, representing the 22 public utility districts and five municipal utilities that make up Energy Northwest; and (3) the Participants Review Board represents the 92 utilities participating in Columbia Generating Station. Senior plant management regularly reports to the Executive Board on plant performance. In calendar year 2015, senior plant management presented on plant performance to the Executive Board almost every month. The investigators understand that the Board of Directors typically meets quarterly, and that the Participants Review Board is required to meet semi-annually and has been meeting three times a year. When the monthly Executive Board meeting coincides with either or both of the Board of Directors and Participants Review Board meetings, the Boards meet jointly and receive performance data from senior plant management. For example, in October 2015, the three boards met jointly for the first time and simultaneously received the CEO and CNO reports on plant performance. This report primarily discusses information presented by senior plant management to the "Executive Board" with the understanding that members from the two other boards may also have been present at the meeting.

indicators has been has been communicated to employees and the Executive Board. For example, the CNO Report to the Board throughout FY 2015 showed that the CGS Index had declined from near top quartile performance to lower third quartile performance. This decline continued through FY 2016 and that continued decline was reported to the Board. However, as explained in further detail below, the timing of entry into fourth quartile performance for the CGS Index was not communicated to the Board at the same time that it was communicated to employees because the CGS Index chart presented to the Executive Board had not been updated with the most recent industry quartile data.

As another example, Management has communicated to CGS personnel and the Executive Board on the two Human Performance incidents identified in the Letter – the level one clearance order failure and the diesel generator operability issue. This conclusion is based on review of presentations to the Executive Board and employees, as well as other written communications. The declining performance issues have been entered into the site corrective action system and are being addressed. There are other indicators, however, that reflect positive performance at CGS, which were also presented to the governing boards and employees (for example the fact that all NRC performance indicators are "green" and there are currently no greater than green NRC findings; the recent "breaker to breaker" operation run – continuous at power operation between two outages; and through 2015 and early 2016, there had been no unplanned reactor trips or shutdowns for five years).[2]

While the investigation team found that the Executive Board presentations contained information on declining performance, including decline in the indicators referenced in the Letters, some Executive Board/Board of Directors members have expressed that the information was not presented in a manner that effectively informed them of declining performance. Indeed, some Board members expressed that senior management emphasized positive performance data over the declining performance data.

The investigation found inconsistencies in how some of the performance information was presented to the Executive Board and to employees. In some cases, these inconsistencies resulted from the use of different industry quartile thresholds among the multiple presentations for depicting plant performance. These quartile thresholds move up and down as industry-wide performance improves and declines. In other words, the quartile thresholds based on (for example) calendar-year second quarter data may be different than the prior quarter's thresholds. Because the thresholds change, a plant could be in one quartile one month and another quartile the next month, even though its performance has not changed.

As will be discussed in detail below, CGS senior management used one set of industry performance thresholds when reporting CGS Index performance in the internal monthly Business Plan and in internal Monthly Department Meetings. These thresholds were set for a 12 month period beginning July 1 (the start of the Energy Northwest Fiscal Year) based on second quarter calendar year industry data. Senior management used a different set of thresholds when reporting on CGS Index performance to the Executive Board for the "At Risk Compensation" (i.e., a portion of plant employees' annual compensation is tied to plant performance, and this is called "At Risk Compensation," or "ARC"). These thresholds were set for a 12 month period

[2] An unplanned reactor shutdown occurred at CGS at the end of March 2016.

beginning July 1 of each year. However, because the Executive Board must vote on the ARC plan before the start of the fiscal year on July 1, the ARC thresholds were based on first quarter calendar year industry data, which were the most recently available data. While utilizing different thresholds for measuring and communicating performance data for different purposes appears reasonable, the inconsistencies among the presentations can be confusing unless the individual reviewing the presentation are aware and understand the basis for the various thresholds and how they are used.

Other inconsistences in the performance data communications resulted from mistakes. For a period of several months in FY 2016 (which began July 1, 2015), management continued to use FY 2015 quartile thresholds (based on industry data from the second quarter of calendar year 2014) to brief the Executive Board when reporting on the CGS Index in the CNO Report, instead of the updated thresholds used in the Business Plan, which were the appropriate metrics (and which were based on industry data from the second quarter of calendar year 2015). The underlying plant performance data used in the two reports was essentially identical, but resulted in management telling the Executive Board that CGS's performance was "yellow" or third quartile while at the same time reporting in the Business Plan (and therefore to CGS employees) that the plant was in the "red" or fourth quartile. This mistake was made due to misunderstanding the various industry thresholds being used for measuring the CGS Index and when those thresholds were to be updated. The CNO failed to ensure that accurate threshold data was used in the Executive Board presentations, and this mistake was carried forward, including during the time when he attended a business school program in the Fall of 2015. Other members of senior management, including the then Acting CNO and the CEO, failed to question why inconsistent reports were provided to CGS employees and to the Board and did not catch the mistake. Management corrected its error in December 2015 only after this issue was brought to light by employees who noticed the discrepancy.

The investigation did not substantiate the claim that on December 14th the CEO and CNO told all employees that the recently confirmed fuel defects caused CGS to enter the fourth quartile for the CGS Index as of November 2015. Rather, the CEO stated that the plant was in the "bottom quartile" and explained that the contributors to CGS being in the bottom quartile included forced loss rate, equipment performance, radiation exposure, fuel defects, and human performance.

In summary, the investigation did not find that senior plant management deliberately hid performance issues, or otherwise misled employees or the Executive Board. Rather, the use of different performance thresholds for different time periods and purposes resulted in miscommunications, misunderstandings, and a mistake, and could leave an impression to an outside observer that performance issues were being hidden.

A significant amount of performance data (e.g., CGS Index, Equipment Reliability, Long Range Plan Predictability, Industrial Accident Safety Rate, Reactivity Management, Department Event-Free Days Clock Reset, Human Performance, Engineering Change Closeout, Unit Capability Factor, Capital Cost, and many others) is available and presented to employees on a regular basis. The Executive Board receives detailed performance data at its monthly meetings. However, the use of different thresholds for otherwise appropriate purposes results in inconsistences that can be confusing, result in mistakes, and left an understandable misimpression about the motivation for the variations. In addition, it is apparent that some

individuals who received information on CGS's performance believe that it could have been communicated more effectively and more clearly.

Recommendations:

- Performance data needs to be clear, consistent, and beyond reproach. Using different thresholds for different purposes may appear to be justifiable and reasonable, but it can also lead to confusion and raise questions among stakeholders about the underlying motivation of CGS staff and senior managers. Performance data communications should be aligned so that all stake holders receive consistent, accurate, and reliable information.

- The Executive Board receives a lot of information on events and performance indicator data from senior plant management in their monthly briefings. The Executive Board should confirm its expectations for what information it expects to receive and the manner and timing of the communication of this information. For example, the Executive Board could direct that senior management immediately notify it when CGS changes quartiles on the CGS Index, either positively or negatively.

- Senior management should ensure that the oral presentations and written materials provided to the Executive Board (and Board of Directors and the Participants Review Board) are conveyed in a manner that recognizes the varying technical backgrounds of Board members. For example, as is typical with PowerPoint presentations, the Executive Board presentations often utilize the "notes" section of a presentation slide to provide explanatory details for the point being made in the oral presentations. The "notes" often contained acronyms and nuclear industry jargon. Board members are not uniformly familiar with nuclear terms and acronyms, plant equipment, and procedures. In addition, the graphical representations of plant performance can be improved to more clearly depict improving or declining trends in plant performance.

- Members of the governing Boards should clarify their expectation for when they are provided copies of briefing materials in advance of their meetings with senior executive staff (e.g., 3-5 business days) in order to allow them to adequately prepare for their meetings.

II. Factual Findings

This section begins with an overview of the two primary means used to assess CGS performance, the Business Plan and the At Risk Compensation Plan, followed by a discussion of the Energy Northwest Excellence Model. Next, the report provides an overview of the methods used to communicate CGS performance to CGS employees and the governing boards. Then the report provides a detailed summary of what information on plant performance was communicated to CGS employees and the governing boards.

A. Measuring CGS Performance

CGS Management communicates performance to employees on a regular basis, in a variety of forums, using a variety of communication tools. In 2015, GCS management provided updates on performance almost every month to the Energy Northwest Executive Board, whose meetings are open to the public (except for those portions conducted in Executive Session), and to the broader Board of Directors and Participants Review Board when those bodies meet jointly with the Executive Board. CGS Management relies on a variety of performance indicators to measure and communicate plant performance. Many of these indicators are included in the site's Business Plan, which (for example) in Fiscal Year 2015 contained more than 80 indicators, including those identified in Allegation 1. Current plant performance data is summarized in the monthly Business Plan. In addition, a portion of Energy Northwest employee compensation is tied to plant performance. This is called "At Risk Compensation" or "ARC." How plant performance is impacting the ARC is also communicated to employees at all-hands meetings and on the company intranet. The Business Plan and the ARC are each summarized in turn below.

1. Business Plan

The Business Plan indicators provide insight on performance in a variety of areas including nuclear safety, industrial safety, equipment reliability, regulatory, human performance, generation, and cost. The Business Plan is updated on a monthly basis to show the prior month's performance for each of the indicators, and the Business Plan is available to employees on the CGS intranet. In its Business Plan, CGS assigns color codes of green, white, yellow, and red to its indicators based on pre-determined numeric thresholds for that indicator. Many of the performance indicators relied on by CGS are used across the nuclear industry, and the results are shared industrywide. This allows CGS to compare its performance against other nuclear plants. In some instances, the pre-determined thresholds are based on the performance of industry peers in terms of "quartiles" of performance.[3]

When CGS uses industry quartiles to measure performance, green equates to "top quartile", white is "second quartile", yellow is "third quartile", and red is "fourth quartile." CGS aspires to be in top quartile when compared to its peers. At the beginning of each month, CGS employees compile the data for the Business Plan performance indicators for the prior month and calculate the monthly value for the indicators. The performance indicators are typically maintained in a spreadsheet, or more recently in a software program supplied by DevonWay,[4] which automatically assign the color codes based on the pre-determined thresholds. For the Business Plan, the CGS Index performance thresholds are set for the 12 month period beginning July 1 each year (the start of the Energy Northwest Fiscal Year). The performance thresholds for the CGS Index are based on second quarter calendar year industry data, which typically becomes available in mid-August each year. Performance thresholds for other indicators may be updated

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[3] For example, top quartile performance for a particular indicator is determined by listing the value of that indicator for every nuclear plant in order of best performance to worst performance and when that list is divided into four equal sections starting at the best performance, top quartile performance would equate to an indicator value that falls within the top one quarter of that list. Similarly, "fourth quartile" performance would be an indicator value that falls into the bottom one quarter of that list.

[4] DevonWay is an operational intelligence software widely used within the nuclear industry for tracking performance indicator metrics at nuclear plants.

more frequently, and at least through December 2015, there was not a consistent practice for updating industry quartile thresholds in the Business Plan.[5]

Once the data is compiled, the Business Plan is updated and shared with the site. This typically occurs by the middle of each month. The results of the monthly updates to key performance indicators are then presented to employees and the Board (as described in subsequent sections).

When the indicators show that performance is not meeting objectives, corrective actions are taken, typically by initiating an "Action Request" or "AR" in the corrective action system, or by developing "excellence plans" to improve performance at the site. Specifically, "Energy Northwest procedure GBP-AM-03, Performance Indicators" provides that when an indicator is yellow for two consecutive months, or has turned to red at any time, then an AR is generated and the actions necessary to return the indicator back to green are developed and tracked in the AR.

2. At Risk Compensation Plan

"At Risk Compensation" or "ARC" is a component of Energy Northwest employees' compensation and is based on meeting predetermined performance objectives. According to the At Risk Compensation Plan document, the purpose of the ARC program is to promote excellence and continuous improvement. Energy Northwest employees receive a payout following the close of the fiscal year based on whether organizational goals are met. There are separate goals for the nuclear and non-nuclear sides of Energy Northwest. In other words, CGS employees have different performance goals compared to their peers in Energy Northwest's Energy Services & Development employees (essentially, the non-nuclear side of the company). Personnel in Corporate Services (e.g, the CEO and CNO/COO) straddle both sides of the organization and thus their ARC is based on both CGS and ES&D performance.

The program for CGS is designed to prioritize nuclear safety above all else. In addition, excellence in reliability and financial performance are also promoted. For CGS, FY 2015 goals were based on NRC Substantive Cross Cutting Issues and violations, the CGS Index, Net Generation, and Meeting Budget. Each goal has a stretch, target, as well as threshold criteria (i.e., the minimum at which a payout will be made). Since FY2016, which began on July 1, 2015, the CGS Index itself is no longer used to determine a portion of an employee's ARC. Instead, some of the components that make up the CGS index are used in determining a portion of the ARC.

The performance metrics used to determine ARC are also measured as part of the Business Plan. However, the performance thresholds used to determine whether ARC performance criteria are met are not the same as the thresholds used in the Business Plan to show that CGS performance criteria are met. The ARC performance thresholds are locked in for the 12 month fiscal year beginning on July 1. However, the thresholds are established based on first quarter calendar year

[5] As discussed herein, the online collective radiation exposure, total industrial safety accident rate, equipment reliability index, and human performance rate thresholds are updated quarterly. The production cost thresholds were updated annually in May. The CGS Index was updated annually in August based on calendar year second quarter industry data. For the CEO ARC report, industry thresholds were from calendar year first quarter industry data, which the Board approves in May before the start of each fiscal year on July 1.

industry data, which becomes available on or about May of each year, so that the Energy Northwest Board can vote on the ARC thresholds prior to the start of the fiscal year.

3. Energy Northwest Excellence Model

The Energy Northwest Excellence Model is a model for changing and sustaining workforce behaviors. It is intended to be a union of management structure, procedures, and processes that result in continuous performance improvement. The Nuclear Excellence Model[6] is based on four principles (The Right People, The Right Picture, the Right Process, and the Right Coaching) and has four interdependent tiers that build upon the preceding tiers' strengths:

- Enablers of Excellence: Qualified Workers, Job Planning/Preparation, Procedures/Work Instructions, Verification/Validation, Supervisor Oversight, and Worker Practices

- Individual Excellence: Accident Free, Control Dose, Event Free, Meet Commitments, Attend Training, and No Rework (these are referred to as ACEMAN)

- Organizational Excellence, Operational Excellence, Training Excellence, and Equipment Excellence

- Nuclear Excellence – Safe, Reliable, and Predictable

The Excellence Model was imported to Energy Northwest by senior plant management based on their prior experience at other nuclear plants. In addition, CNO Sawatzke developed the plan to implement the Excellence Model in phases. CGS was a poor performing plant as compared to its peers, and CNO Sawatzke and CEO Reddemann were charged with turning the plant around. Rolling out the Excellence Model was a large effort and needed to be implemented in "bite sized" phases.

There are four Phases in the Excellence Model:

- Phase I – Improving Behaviors, which consists of increased accountability and coaching, improved risk management and decision making, improved compliance to corrective action program, and demonstrated discipline to the work management process

- Phase II – Demonstrating Results, which consists of reduced corrective action program backlogs, reduced maintenance backlogs, improved equipment reliability index performance, improved risk management and decision making, and all outage preparation milestones met

- Phase III – Achieving Excellence, which consists of supervisor led (i.e., leadership pushed down into the organization), predictable performance, and successful outage

[6] The non-nuclear side of Energy Northwest has a separate Excellence Model, but nearly all of the aspects are the same. For example, one difference is that the non-nuclear side has "Control Costs" as a measure of Individual Excellence instead of "Control Dose."

- Phase IV – Sustaining Excellence, which consists of predictable long-range planning and execution, risk management is core business, strong governance and oversight, and cost-effective operation.

Senior plant management assigned indicators to measure the performance in each phase. Management reinforces the items to be focused on in the current phase, and will transition to the next phase after having sustained results in the current phase.

B. Methods for Communicating Performance

Management communicates with employees and the public using a variety of structured meetings and written communications. These venues and tools are used to reinforce performance results in terms of the measureable indicators as well as by sharing real time lessons learned from human performance and safety events. In addition, the site maintains an intranet site that provides additional communications and documents. And CGS maintains a corrective action system to document situations or events (in the form of an "Action Request" ("AR")) that fall short of expectations and requirements. The following sections describe some of the key communication venues used to communicate performance.

1. Overview of Monthly Department Meetings

When the CEO arrived at CGS in July 2010, he required that each department hold a Monthly Department Meeting ("MDM") with all employees to promote the communication of performance and the alignment of expectations throughout the organization. These meetings occur on the first Monday of each month and are led by the Department Managers with a common set of slides provided to CGS employees. Prior to the Department Meetings, these slides are presented to supervisors and managers at a leadership meeting to ensure that leadership is prepared to present consistently the information to their employees. The slides include information on present upcoming events, industrial safety topics, regulatory updates, performance indicator status, and human performance observations across the site. The slides also provide a place for the Department Managers to address Department specific human performance observations and Department Excellence Plan focus areas.

At these Department Meetings, the status of the performance indicators is provided. The expectation is that all yellow and red indicators (those in the lowest two quartiles) are presented and actively discussed. This discussion includes an explanation of the performance indicator, how its measurement relates to CGS's Excellence Model, what the top quartile goal is, what CGS's value is, what has caused the indicator to be yellow or red, and what actions are being taken to improve performance in that area. All CGS staff and managers interviewed for this investigation stated that indicator status is reviewed at MDMs. One employee was not familiar with the CGS Index and whether it was reviewed, but he was familiar with many of the other sub-indicators that make up the CGS Index.

Our investigation team reviewed the slides that were presented to employees from January 2015 through February 2016. The data presented in those slides represents performance from November 2014 through December 2015. Because the department meetings are the first Monday in the month, the performance data presented in the monthly department meetings is the

performance data from two months prior to the meeting e.g., the November 2015 meeting reports performance from September 2015.

2. Overview of Quarterly All Employee Meetings

The CEO along with the Senior Leadership Team meet on a quarterly basis with all employees to provide updates, share observations and insights, and address questions and concerns. Typically four sessions of the all employee meeting are held and videotaped, with one recording preserved for the record. All employees are expected to attend one of these sessions. If they cannot attend, they are expected to view the video recording of the meeting. Employees are provided an opportunity to ask questions. If employees prefer to remain anonymous, or otherwise do not want to ask questions in public, there are cards that can be filled out with their questions, which they place in a drop box. The responses to the drop box questions are then placed on "Ask Senior Management", which is on the EN intranet.

3. Overview of Communication to the Board

Energy Northwest Executive Board meetings are open to the public except when the Executive Board meets in Executive Session. At these meetings, CGS Leadership provides updates on performance in terms of the performance indicators, including those indicators identified in Letter 1. The CNO Report to the Executive Board is the primary tool used to communicate performance in terms of performance indicators to that governing body (and to the Participants Review Board and Board of Directors when meeting jointly with the Executive Board). The CEO also presents a color-coded "Dash Board" that shows the status of the ARC performance metrics and some of the key industry performance indicators. CGS Leadership also provides updates on significant topics affecting CGS performance, which have included many of the topics raised in Letter 1.

C. Communication of Specific Performance Measures

The following sections detail the means by which plant performance indicators raised in the allegation letters (CGS Index, Plant Capability and Reliability, Equipment Reliability, Collective Radiation Exposure, and Human Performance) have been communicated to CGS employees and the Energy Northwest governing Boards, and whether the alleged decline in performance has been communicated.

1. CGS Index

The CGS Index is a composite indicator of several sub-indicators that together are used to measure overall plant performance. The inputs to this indicator include measures of plant reliability such as: "capability factor", "industry forced loss rate", "forced loss events" and "unplanned manual and auto scrams". Other inputs include measures of nuclear and industrial safety such as of safety system availability, fuel reliability, chemistry effectiveness, "collective radiation exposure" or "CRE", and "total industrial safety accident rate". In addition to being input to the CGS Index, each of these sub-indicators is also tracked and reported separately. The various inputs are assigned points based on meeting specific targets.

Monthly Department Meetings: The status of the CGS Index is presented monthly to CGS employees at the Department Meetings. And because the CGS Index was either yellow or red throughout 2015, it would have been discussed at those meetings as described previously. The following summarizes the information presented to employees regarding the CGS Index in Department Meetings from January 2015 through February 2016, which reported data reflecting performance from November 2014 through December 2015. **Attachment A** provides tables taken from selected monthly Business Plans that show the CGS Index, quartile color, and the applicable thresholds for the then current month and several previous months. The quartile thresholds that applied for the identified month are provided in the second to last column of each table.[7]

- The CGS Index declined from 88.9 for November 2014 to 78.3 for December 2015.

- The CGS Index was reported as Yellow or "third quartile" for November 2014 through July 2015. The CGS Index was reported as 81 in July.

- When the second quarter quartile information became available in August 2015, the new quartile thresholds were applied retroactively and "changed" July from yellow to red. This was appropriate because the new threshold was to apply for the fiscal year beginning July 1.

- In the Business Plan, the retroactive application of the thresholds also changed June from yellow to red. This was not appropriate because June was correctly categorized as yellow under the thresholds that applied in the prior fiscal year.

- With the updated thresholds in place, the CGS Index was reported as Red or "fourth quartile" through November 2015. The value of the CGS Index in August 2015 when CGS transitioned to Red was 81.16. As previously discussed, the Department meetings present performance data from two months prior. Thus, this decline to fourth quartile was not presented to employees until October 2015.

- The thresholds for the CGS Index color coding were updated again in December 2015, when the new DevonWay software was adopted. The DevonWay software assigns the thresholds in January of each calendar year using the prior quarter data (i.e., 4th quarter 2014 industry data is used to establish the thresholds that apply for the 2015 calendar year). This change is reflected in the color coding in the Department Meeting presentations, although there is no indication from the slides that this change in threshold was communicated to employees.

- The switch to the DevonWay software in December 2015 (and thus also to applying the quartile thresholds in effect for 2015, based on 4th Quarter 2014 industry data)

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[7] The color coding presented in these tables is used in identifying the status of the indicator in the MDM presentations. However, these tables are not included on the graph in the MDM presentation like they are in the Business Plan graph. The MDM presentation includes only the graph portion and not the legend. The talking points discuss the value and what the top quartile goal is, but they do not discuss the lower quartiles values or the fact that red equates to 4th quartile and yellow equates to third quartile. Thus, employees may not be aware of the relationship between the color coding and the quartiles.

explains why December 2015 Business Plan shows July, August, September and October as in the yellow or third quartile, when the prior Business Plan in November showed those months in the red or fourth quartile.

- If the same thresholds had remained in place for the Business Plan throughout 2015, the CGS Index would have remained yellow and "third quartile" until November 2015, when the monthly value declined to 78.4. As will be discussed below, these thresholds continued to be used in the CNO Report to the Board, and thus the CNO continued to report third quartile performance to the Board until December 2015.

- From January 2015 through December 2015, the Monthly Department Meeting slides reported that the CGS Index declined due to Forced Loss Events in July and August 2014 and July and August 2015.

- The impact of the fuel failure was not reported to impact the CGS Index until the January 2016 Department Meeting, as this meeting presented the November 2015 performance results, which is when the fuel defects were confirmed.

All Employee Meetings. The investigation team watched the recordings from the August 31, 2015 and December 14, 2015, All Employee Meetings and reviewed the CEO talking points for those meetings for the purpose of determining whether the Senior Leadership team were sharing only positive performance or were sharing both positive and negative performance trends. Allegation 1C refers to alleged communications made by the CEO and CNO to all employees on December 14, 2015, presumably at the All Employee Meeting held that day. The investigation team reviewed the December 14, 2015 video and talking points to determine whether the CEO said "that the fuel leaks caused CGS to enter the 4th Quartile as of November 2015" as stated by the concerned individuals. The investigation team also asked interviewees whether they recalled the statements made by the CEO regarding the CGS Index on December 14, 2015.

At the August 2015, meeting the CEO talked about the accomplishments[8] and challenges[9] of the organization in Fiscal Year 2015, which ended on June 30, 2015. He also talked about how the organization performed with respect to its "At Risk Compensation Goals" for FY 2015. As

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[8] Some of the accomplishments reported by the CEO for CGS were: Columbia achieved its first "breaker to breaker" run in its 30-year history—683 days; during those 683-days, Columbia produced nearly 18 million megawatt-hours of electricity and operated at a more than 98 percent capacity factor; Columbia broke a calendar-year generation record, delivering nearly 9.5 million megawatt-hours to the grid, and it had achieved its third consecutive generation record.

- In November 2014, Columbia marked five years without an unplanned shut-down; as of August 2015, Columbia was well past 5 and a half years without an unplanned shut-down;
- in FY2015, there were no lost time or restricted duty events;
- Columbia had a record low (of zero) OSHA recordable injuries during the May-June 2015 outage; and
- Columbia accomplished another record during the outage in that they had the lowest personnel contamination events (only 14).

[9] The challenges reported included: two unplanned reductions in power resulting in significant lost points in the CGS index; a significant clearance event (Level 1) involving work being performed without a clearance; exceeded Planned Outage duration; radiation exposure "substantially" exceeded outage dose goal; significant emergent work during the outage.

previously explained, the CGS Index was an input to CGS employees' "At Risk Compensation" in FY2015. For FY2016, specific components of the CGS Index are inputs into CGS employee At Risk Compensation.

Like the Business Plan thresholds, the At-Risk-Compensation or ARC targets for the CGS Index are based on industry performance. However, the time frame to determine the industry performance was different than that used in the Business Plan. Whereas the Business Plan historically used second quarter industry data to assign the performance thresholds for the 12 month period beginning July 1 each year, the ARC targets are based on first quarter industry data. The reason provided for using earlier industry data for the At Risk Compensation is that the Board must approve the ARC Plan prior to the beginning of the Fiscal Year, and the second quarter industry data is not available until mid-August, after the start of the Fiscal Year. Thus, the 2015 fiscal year targets were set prior to the start of 2015 fiscal year (July 1, 2014 to June 30, 2015), using industry data available in May 2014. The goals for the CGS Index included a stretch goal equating to top performance and the threshold equating to the industry median. The target goal was midway between these two. This one goal accounted for 45 percent of the eligible At Risk Compensation for employees. The CGS Index in June 2015 was 84.21, which was third quartile. This value had been reported to employees in early August 2015 at the Monthly Department Meeting. The CEO explained at the August 31, 2015 All Employee Meeting that because the CGS Index was in third quartile, which is below threshold, there would be no payout for that goal.[10]

At the December 14, 2015 All Employee Meeting, the CEO provided an overall industry update and discussed CGS performance including the CGS Index. At this meeting, the CEO discussed that the Executive Board would be onsite to observe first-hand the environment at CGS. He explained that the timing of this visit was not arbitrary. He described that the CGS Excellence Initiative brought the site from bottom quartile as measured by the CGS Index to top quartile in just a few years. He explained that in areas of interest to rate payers and the general public, CGS continued to sustain excellence in that production costs continue to decline and CGS had set generation and online performance records. He stated, however, that in terms of "our expectations for ourselves" CGS was not where it wanted to be in that its "expectation is to be top quartile" for the CGS Index (and other performance metrics). He said "But today, we are, back in the bottom quartile". He did not state that CGS had just entered the bottom quartile in November. He explained that the contributors to CGS being in fourth quartile for performance were "forced loss rate, equipment performance, radiation exposure, fuel defects, and human performance." And as previously explained, management had already communicated to

[10] The CEO also explained that employees had achieved target payout for regulatory performance and budget. But, he explained, CGS was below target for generation due to the time at reduced power following the outage and the outage extension. Overall, CGS employees achieved approximately 50 percent of payout. The CEO acknowledged that some may feel like this result does not align with a breaker-to-breaker run. He explained that the ARC is intended to be a broad indicator of performance and that since the CGS Index was in third quartile, and generation substantially missed the target, performance was not where senior management expected it to be. He discussed that there were a number of lessons learned and corrective actions that would need to be taken to address performance gaps in outage execution and equipment reliability. He reinforced that the site should be proud of the breaker-to-breaker run. He also discussed that he was working with the Executive Board and Compensation Subcommittee to implement lessons learned for the FY 2016 ARC, primarily to ensure that one Performance Indicator doesn't have too much weight.

employees in October that the CGS Index was "red" or "fourth quartile" as of August 2015.[11] Thus, there was no motivation for the CEO to deceive employees regarding the status of the CGS Index in December as alleged.

The CNO also discussed performance at this meeting. He also discussed the contributors to the decline in the CGS Index – forced loss rate, radiation dose, capability factor, and the fuel defect. He did not address the particular point when the site entered the fourth quartile. He attributed the "gap to excellence" primarily to outage performance in that the outage went longer than planned and that the dose during the outage was significantly greater than planned. In addition, when describing the fuel defects, he stated that "more than likely" the defect was due to debris that entered the system during the outage, but did not specify the source of the supposed debris.

Executive Board Meeting. The CNO presents a report on performance at CGS each Executive Board meeting. The investigation team reviewed those reports and found that the CNO had presented data showing the decline in performance in terms of the CGS Index. From January 2015 through July 2015, the CNO Report contained a graph that showed the long-term performance of the CGS Index beginning in December 2009 through the then-current index. This chart also showed top performance, median performance, and low industry performance with horizontal lines identifying the level for each measure. It did not use the color coded thresholds previously discussed and that are used in the Business Plan and presented to employees. Industry performance changed over time and thus the thresholds against which CGS measured itself changed over time. These changing thresholds are depicted on the chart that was shown through July 2015. Pillsbury agrees with the statement in allegation Letter 3 that this type of chart is a "good representation of current performance" and "allows the viewer to understand where we have been and where we stand against our peers."

In August 2015, as part of an overall attempt to improve the presentation of data to the Board, the CNO Report had been redesigned to reduce and simplify the reporting of performance indicators. The CNO Report added a "Dashboard" that presented on one page a color coded status of what management viewed as the key indicators. This page was followed by the indicator graph and then one page that described the status, cause of declines in performance, and corrective actions. Thus, the method used for reporting the CGS Index from January 2015 through July 2015 differed from the remainder of the year.

Also beginning with the August CNO Report to the Executive Board, the CNO used the same type of chart as used in the Business Plan and as used to report CGS Index performance to employees. However, the numerical thresholds for the color codes (i.e, the values used to assign quartiles) were not the same as used in the Business Plan, which were derived from calendar year 2015 second quarter industry data. Instead, the CGS Index chart presented to the Executive Board continued to use the numerical values for the quartiles depicted on the chart presented to the Board in July 2015 described above (i.e., the chart showing long term history of the CGS Index). The same performance thresholds that had been shown to the Executive Board throughout 2015 continued to be used in the CNO presentation in August 2015, while the

[11] The October MDM presentation CGS Index Chart correctly showed the CGS Index as Red. However, the "Dash Board" in that presentation shows the CGS Index was "yellow".

Business Plan thresholds had been updated with the most current industry data.[12] This resulted in lower goals for measuring and reporting performance to the Board than were being used in the Business Plan and being reported to employees.

Interviews with individuals involved with preparing, reviewing, and presenting the CNO Report, as well as document reviews, showed that this error occurred because of misunderstandings among those individuals. The individual responsible for preparing the CNO Report stated that he had discussed with the CNO in early August whether the CGS Index quartile thresholds should be updated at the same time as the Business Plan. The individual who prepared the slides was new to this assignment and was not sure whether the Board presentation relied on the same industry data as the Business Plan. He stated that he was aware that the ARC used the CGS Index, and that the Board approved those goals at an earlier time. He did not investigate whether the quartile thresholds used in the ARC matched those used in the CNO CGS Index Report. This initial conversation occurred in late July or early August prior to the availability of those updated thresholds and thus prior to any knowledge that the new thresholds would place CGS in the lower quartile. As the Board presentation was being developed, the CNO provided a draft copy to the CEO for review. One of the comments that the CEO made was "CGS Index – do we always update industry data now? Recall my asset performance slides on incentives use previous industry data." Based on this comment, the CNO decided not to update his CGS Index slide with the new industry quartiles. The CNO explained that he believed that the industry quartiles reflected on his CGS Index chart were approved by the Board as part of the ARC. Thus, he did not have his slide updated with the Business Plan quartile thresholds and continued to use the thresholds that had been used for the past fiscal year.[13]

This decision turned out to be in error because the CGS Index quartile thresholds used in the CNO Report were not the same as used in the ARC in FY 2015 or approved by the Board for the FY 2016 long term incentive. Furthermore, the Board had determined that the CGS Index would not be used for the ARC for FY 2016, although it was to be used for the long term incentive plan. As a result, the CEO was no longer reporting the status of the CGS Index in his presentation. The CNO stated that he did not verify that whether the thresholds used in his report were those approved by the Board for the ARC, and that this was his error. The CEO, CNO, and the individual who prepared the CNO presentation were aware that the Business Plan/internal reporting of the CGS Index was different than that being reported to the Executive Board. However, all were under the mistaken belief that there was a link between the CGS Index quartiles in the CNO report and those in the incentive plans approved by the Board and therefore

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[12] Letter 3 states that the August 2015 "graph no longer includes quartiles, history of the index or slope of decline". It is true that the long term history of the CGS Index was no longer included on this chart. However, the quartiles were on the August 2015 chart. The August 2015 chart is the same chart used in the Business Plan and presented to employees. As previously explained, industry quartiles are represented by the four color codes and the numerical values assigned to those colors. Green equates to "top quartile", white is "second quartile", yellow is "third quartile", and red is "fourth quartile." Furthermore, the numerical values of the quartiles in the August 2015 chart are the same as those used in the prior month and which had been in use since August of 2014. Pillsbury agrees, however, that the format previously used more clearly showed long term trends and what the industry quartiles were at various points in time.

[13] He did not realize his mistake until January 2016 when the Letters were received, at which point he thoroughly reviewed the source of the threshold data for each of the various reports.

that the difference in reporting was appropriate. None of them thoroughly vetted this discrepancy.

After this decision was made to leave the CGS Index thresholds as is, the CNO was away from the site at a Harvard Business course for approximately two months in the Fall of 2015. During this time, the CNO presentations to the Executive Board were made by the Vice President of Operations, who was acting CNO.

In late October 2015, a public affairs employee recognized that different performance results were being reported internally at Management Review Meetings from that being reported to the Board in the October 2015 meeting. After further discussions with her leadership and others regarding why the difference existed, she and her management brought this difference in reporting to the attention of the CEO at a meeting on December 1, 2015. All were concerned that these conflicting reports could cause confusion. The CEO requested that she determine when the industry quartile thresholds for each of the indicators that he reported on to the Board in his "Dashboard" were updated. She found that the online collective radiation exposure, total industrial safety accident rate, equipment reliability index, and human performance rate thresholds are updated quarterly. The production costs were updated annually in May and the CGS Index was updated annually based on second quarter industry data. For his "ARC" Dashboard report, his industry thresholds were from calendar year first quarter industry data, which the Board had approved in May. As a result of this investigation of the different threshold updates, the CEO requested that a footnote be added to his December 2015 Board presentation specifying when the thresholds were set for the ARC indicators.

Also in December 2015, the decision was made to make the CNO CGS Index chart presented to the Board consistent with the CGS Index chart included in the Business Plan. Specifically, the industry thresholds were made consistent. The CNO does not recall what prompted that change. The individual who prepared that report recalled that this direction was given because the CGS Index was in fourth quartile no matter what industry quartile thresholds were used (second quarter calendar year 2014 versus second quarter calendar year 2015) and it was easier to discontinue maintaining two sets of performance indicators. It was also recognized at that time that the ARC no longer used the CGS Index and therefore the prior concern regarding consistency with the ARC did not exist. Thus, the quartile thresholds in the Business Plan and the CNO presentation to the Board were aligned in December 2015.

Based on the interviews and document reviews, this investigation concludes that there was no intent to deceive the Board when the industry thresholds were not updated in the August 2015 Board presentations. Rather, the use of different performance thresholds for different time periods and purposes resulted in miscommunications, misunderstandings, and a mistake. When confronted with the mistake, senior management corrected it.

A review of the CNO Reports to the Executive Board identified the following information communicated regarding the CGS Index. **Attachment B** provides tables taken from selected 2015 monthly CNO Reports to the Executive Board showing the CGS Index, quartile color, and the applicable thresholds for the then current month and several previous months. The quartile thresholds that applied for the identified month are provided in the second to last column of each table.

- From December 2009 through April 2013, CGS steadily improved its performance, rising from very low performance to middle-of-the-road performance.

- After a slight decline in 2013, CGS continued its improved performance in the CGS Index to the top quartile in late 2013.

- The CGS Index came out of the top quartile performance in February 2014, and dropped significantly in June 2014 and June 2015. At this point, the CGS Index was in third quartile (i.e., between the median and lower quartile). The causes for these declines were reported to the Board. The principal causes in the decline in CGS Index were forced loss events and dose from emergent work in the 2015 outage involving the Reactor Water Cleanup pipe replacement.

- In August 2015, the CNO report format was revised to use a "dash board" of indicators with color coding followed by the individual graphs of the performance indicators.[14] The dashboard provides a one page view of the plant performance as measured by key indicators representing nuclear safety, radiological safety, industrial safety, reliability, environmental, and cost (two examples of the dashboard from August 2015 and January 2016 are provided at **Attachments C and D**). At this time, the presentation of the CGS Index began to use the same format as presented in the Business Plan with four color codes based on industry quartiles. But, as previously explained, the thresholds used at that time for the CGS Index presented to the Board were the quartiles identified in the table above for the time period November 2014 through July 2015.

- The CGS Index was reported as 81.02, yellow, and third quartile at the August 2015 Executive Board meeting. This report utilized CGS July 2015 performance data and is consistent with that initially reported to employees. The CNO reported to the Board that the primary drivers for the reduction in performance was forced loss rate, forced loss events, unit capability factor, and collective radiation exposure.

- The CNO report continued to use the same quartile thresholds for the CGS Index until the December 2015 Executive Board meeting. That is, the CNO report did not update the thresholds for industry quartiles at the same time that those thresholds were updated for the Business Plan for the reasons previously explained.

- As a result, while the actual value for the CGS Index was accurate and consistent with the information that was reported to CGS Staff, the reporting to CGS staff and the Executive Board was not consistent with regard to which quartile the site was in for the CGS Index. The Board was told that the CGS Index continued in the third quartile/yellow for August and September, while at the same time the Business Plan

[14] The CNO's performance indicator presentation format was updated as a result of feedback from an Executive Board member that there may be too much data presented to the Board and that the format may be confusing. It was not changed, as alleged by Letter 3, to deceive Board members. The Dashboard concept was used to provide on one page the overall performance of the organization in terms of key indicators. Following the dashboard, each indicator is presented and a one page chart explaining the status, the challenges impacting that indicator, and the plan to address those challenges.

and communications to employees at Monthly Department Meetings showed that the CGS Index was in the fourth quartile/red for this same time period (and as well as July once the updated thresholds were retroactively applied to July 2015).

- At the December 2015 Executive Board meeting, the CNO Report had updated the CGS Index quartiles to be consistent with the business plan thresholds and reported that the CGS Index was in fourth quartile because it was recognized that the original concern with presenting two different thresholds to the Board was unwarranted.[15]

- The CGS Index slide presented at the December 2015 Executive Board meeting showed fourth quartile/red performance going all the way back to June 2015. It was appropriate for the report to show fourth quartile/red performance back through July because the updated thresholds (derived from second quarter 2015 data) applied for the fiscal year beginning July 1. It was not appropriate for the report to change the June 2015 color from yellow to red; June 2015 should have remained third quartile/yellow performance. The cause of this mistake was updating the thresholds in the spreadsheet used to produce the charts. Although the spreadsheet maintains the historical value for the CGS Index, the spreadsheets do not maintain or "lock in" the historical color coding. It simply applies the new thresholds to the old value. Thus, while the overall number did not change, the automatic coding of the spreadsheet changed the color for June 2015 to red, even though it appropriately had been yellow under the thresholds that applied for fiscal year 2015. It is understandable that this variation could cause confusion and questions about the motivation for the differences.

2. Plant Capability and Reliability

The Letter identified that plant performance has declined in terms of "reliability" and "capability" and that this decline has been hidden from employees and public. While it is true that some of the measures show declining performance, this performance has not been hidden or ignored by leadership. As previously described, the CGS Index is composed of multiple sub-indicators. These sub-indicators are tracked individually as part of the Business Plan and are presented to employees at Department Meetings and the public at Executive Board Meetings. Several of these sub-indicators provide measures of the overall facility reliability and capability including "industry forced loss events", "industry forced loss rate", "unplanned manual & automatic scrams" and "unit capability factor". These indicators provide a measure of whether the unit is reliably providing power to its customers in that they reflect "unplanned" changes in power and the plants ability to continuously run at or near full capability. The indicators also reflect on whether equipment is being maintained appropriately due to the fact that unplanned power changes are typically caused by equipment reliability and failures.

[15] Between the time the original decision was made to use the first quartile industry performance data in August and the time to undo this decision in December, the CNO was attending a management program at Harvard University. During this timeframe the Vice President of Operations presented the CNO Report and did not question the thresholds being used.

Monthly Department Meetings. The following information was presented to employees during Monthly Department Meetings from January 2015 through February 2016:

- Industry Forced Loss Events indicator was presented as Red in the January 2015 to May 2015 meetings (reflecting November 2014 through March 2015 performance) due to various equipment failures that led to forced reductions in power in 2013, 2014, and 2015.

- Industry Forced Loss Rate was Yellow from January 2015 to May 2015 (reflecting November 2014 through March 2105) due to the same equipment failures that impacted the Industry Forced Loss Events indicator.

- Department Meeting presentations transitioned to Excellence Model Phase IV performance indicators in July 2015, following the outage. The July 2015 presentation identified the Phase IV indicators that would be utilized for measuring Phase IV performance and which would be presented in Department Meetings in the future. Forced Loss Events and Forced Loss rate were not included in the Phase IV indicators that would be presented in future meetings. However, these sub-indicators remained as inputs to the CGS Index, which continued to be presented, monitored, and tracked in the Business Plan, and which as previously explained is available for all employees to view on the intranet.

- The Facility had no "Unplanned Manual & Automatic Scrams" over the time period. In fact, at the time, CGS had not had an unplanned scram in over five years.

- Unit Capability Factor was white from November 2014 until July 2015, when it turned yellow, with a value of 89.77%, following the extended operation at reduced power following the outage. This indicator remained yellow through December 2015.[16]

Board Meetings. This investigation team compared the leadership communication to the Board regarding plant capability and reliability to the information communicated to the employees. The performance presented to the Executive Board in these areas was consistent with that communicated to employees.

- Industry Forced Loss Events indicator was presented as red from January 2015 to December 2015 due to various equipment failures that resulted in forced temporary reductions in power during 2013, 2014, and 2015.

- The Industry Forced Loss Rate indicator was not presented to the Board until August 2015, when the CNO Report format changed to include the "dashboard". Beginning in August, this indicator was presented as Red/fourth quartile. This performance reflects the same equipment failures that impacted the Industry Forced Loss Rate

[16] Letter 1 alleges that the CGS capability factor as of November was near the bottom of operating reactors. The industry data for November was not available for review and thus, the investigation team could not confirm the allegation. The investigation team reviewed industry data from January 20, 2016, and found that CGS capability factor was at the top of the fourth quartile of plants.

indicator. This indicator continued to be reported as being in fourth quartile through December 2015.

- Unit Capability Factor was presented as white in the January through July reports (reflecting performance from December 2014 through June 2014). Consistent with the reports provided to employees, the capability factor was reported as Yellow at the August meeting with a value of 89.77%, following the extended operation at reduced power following the outage. This indicator remained yellow through December 2015.

- The quartile thresholds for the capability factor were updated beginning with the September 2015 CNO Report, which reported performance through August 2015. This caused the color coding reported for previous months to also change e.g., June and July were shown as yellow instead of white as presented in prior months.

3. Equipment Reliability Index

Allegation 1 states that performance has been declining in terms of the Equipment Reliability Index and that this performance has been hidden from the public and site personnel. While performance as measured by the Equipment Reliability Index has declined, this was not hidden. The status of this indicator was presented at employee and Board meetings. Furthermore, the plans to improve performance in the relevant areas were communicated to the staff and the Board. The Equipment Reliability Index , like the CGS Index, is a composite index of multiple sub-indicators that measure various aspects of equipment performance and maintenance.

Monthly Department Meetings. A review of the Monthly Department Meeting presentations from January 2015 through February 2016, which reflected performance from November 2014 through December 2015, showed the following:

- The Equipment Reliability Index was green from November 2014 through June 2015, with values ranging from 85 to 89.

- The Equipment Reliability Index was Red beginning in July 2015, with a value of 81 and remained red until December 2015. The Equipment Reliability Index hit a low value of 74 in November 2015 and increased to 80 in December 2015.

- The threshold for Green from November 2014 through June 2015 was greater than 85. However, in comparison to its peers CGS was in the third quartile from November 2014 through June 2014. The Notes for the slides, to be used by the managers, state that the CGS goal is to be in industry top quartile even though the Equipment Reliability Index is considered green at far lower values. The color thresholds used at this point were consistent with industry guidance for the Equipment Reliability Index. [17]

[17] Although not presented at the Department Meetings, a review of industry data shows that CGS's Equipment Reliability Index for the time period of July 2015 through January 2016 shows that CGS was ranked out of 99 plants as follows: July-August, 78th; September –November, 97th; and December – January, 90th. While not the lowest as the allegation states, CGS's performance is near the bottom of the industry in this indicator.

Board Meetings. The communication to the Board regarding the Equipment Reliability Index were consistent with those presented to employees.

- The Equipment Reliability Index was green from through June 2015, with values ranging from 85 to 89.

- The Equipment Reliability Index was Red beginning in July 2015, with a value of 81 and remained red until December 2015. The Equipment Reliability Index hit a low value of 74 in November 2015 and increased to 80 in December 2015.

4. Radiation Protection

Allegation 1 correctly identifies radiation protection as one of the areas where CGS performance has declined. That decline in performance has primarily resulted from the increased dose received by workers as a result of equipment upgrades and replacements, in particular the replacement of reactor water clean-up system piping in May 2015 during the outage. The investigation did not substantiate the allegation that senior plant management has "ignor[ed]" the decline in radiation protection performance, or otherwise attempted to hide it from the plant and the Executive Board. As discussed below, CGS has taken specific measures to improve the plant's performance in this area, and has routinely communicated information on radiation protection performance.

Collective Radiation Exposure ("CRE") is the principal performance indicator from a radiation protection perspective. CRE totals all of the radiation exposure to workers during both on-line and outage periods and is measured in "person-rem".[18] The CRE performance indicator is a two year rolling average of radiation dose, normalized to an annual value. This is accomplished by totaling the exposure from eight calendar quarters and then dividing that total by two (due to the two year fuel cycle) to obtain the CRE value. CRE data is obtained from two sources: (1) an electronic dosimeter ("ED") worn by individuals who enter the radiologically controlled area ("RCA"); and (2) the dosimeter of legal record ("DLR") worn by plant workers at all times. The ED provides the plant with monthly data on radiological dose. The DLR data is obtained and analyzed every six months. There can be inconsistencies between the monthly ED data and the 6-month DLR data. When the DLR reading is obtained, that data becomes the legal record of dose that is received by that worker.

According to the Radiation Protection Manager, the recent decline in radiation protection performance (or, stated differently, the increase in dose received by workers) resulted primarily from equipment upgrades that the plant has undertaken over the past few years. Repairing or replacing radioactively contaminated equipment results in dose being incurred. The most recent equipment upgrade that resulted in increased dose to workers occurred in May 2015 during the outage. CGS performed corrosion inspections in the reactor water clean-up system in the heat exchanger. The inspections found that some of the piping had fallen below minimum wall thickness thresholds and needed to be replaced. This was "emergent" work, or work that was not planned to be performed during the outage. As this system is radioactively contaminated, the

[18] A "rem" is a measure of radiation dose. A "person-rem" typically is a unit of collective radiation dose applied to populations or groups of individuals.

replacement of portions of the system resulted in an increased dose being incurred by the workers performing the replacement, and therefore an increase in the cumulative site dose. The Radiation Protection Manager stated that CGS aims to minimize dose and radiation exposure to the workers to as low as is reasonably achieveable, but the equipment change-outs over the past three outages were needed investments in plant upgrades and thus necessitated an increase in the dose to individual workers and the cumulative dose at the site.[19]

The Radiation Protection Manager stated that plant workers received 260 person-rem of dose in the 2015 outage, compared to 179 person rem in the 2013 outage. Roughly half of that increase, or 40 person rem, resulted from the replacement of the reactor water clean-up system piping. The increased dose from the outage negatively impacted the 24 month CRE rolling average. As can be seen in the below table taken from the February 2016 Monthly Department Meeting presentation slides, the CRE value in the months leading up to the outage was between 135-140 and in the "yellow" or third quartile for Boiling Water Reactor ("BWR") nuclear plants. As of May 2015, the rolling average went in the "red" or fourth quartile, and as of June 2015 ranged between 165-166.

Value(s) by Period	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Collective Radiation	136.00	139.00	139.00	135.00	144.00	166.00	165.00	165.00	166.00	165.00	165.00	166.00

Because CRE performance transitioned from third to fourth quartile, the site initiated AR 00330508 on June 7, 2015, which was titled "Columbia is now 4th quartile in CRE (BWR 2 year rolling avg)." The AR further explains:

> At the end of May 2015, Columbia's Collective Radiation Exposure two year rolling average is now 152 [person-rem] putting it into the fourth quartile amongst BWRs [ ]. This was understood as a possible scenario based on the outage scope (and associated dose) and this CR is to capture this. The station has been yellow or third quartile CRE since May 2013.

AR 00330508 explains that CGS is taking action to address the decrease in radiation protection performance:

> Columbia is now 4th quartile in CRE (BWR 2 year rolling avg). Document actions taken into completion notes. Currently, a revision to the station 5 year CRE Reduction plan is ongoing and is intended to be presented to SSAC in September 2015 for review and comments. Based upon that review and subsequent approval, it is expected that this will drive the station's response to moving from the 4th quartile for CRE. Additionally, senior management is addressing CRE performance with executive board in the week of 8.24.15 and an outline of what is being presented is in EDMS to document that some action are underway to address CRE performance. This action will be extended into October

[19] Although there was an increase in the dose to individual workers as well as an increase in the cumulative dose at the site, these increases were appropriate for the circumstances, consistent with industry practices, and below federal regulatory requirements. Per NRC regulations (10 C.F.R.§ 1201), the annual occupational dose limit for an individual worker is 5 rem. The Radiation Protection Manager stated that no individual worker exceeded the limit.

to allow time to document what has transpired with the 5 year CR reduction plan following SSAC review and management input.

As noted in AR 00330508, CGS was in the process of revising its 5-Year CRE Reduction Plan. The Radiation Protection Manager provided a draft copy of that plan to the investigation team. The Radiation Protection Manager stated that he was to present the draft plan to INPO that same week.

a. Communication of Radiation Protection Performance to Employees

In addition to the initiation of AR 00330508, CGS communicated to employees the decline in the plant's radiological protection performance over 2015 through multiple avenues:

Daily Dose Reports. The investigation included review of selected CGS Daily Dose Reports. The Daily Dose Reports are emailed to any CGS employee who requests to be on its distribution. Presently, approximately 160 employees receive a daily email with the dose report from that day. The Daily Dose Reports are also available on the plant's intranet. Among other information, the reports contain a chart that depicts in which quartile (among BWRs) CGS ranked within for the most recent quarter for which data is available. For example, the September 1, 2015 Daily Dose Report, which is based on second quarter 2015 data, shows CGS in the fourth quartile with a 2 year rolling average CRE of 178 person-rem. The October 1, November 1, and December 1, 2015, Daily Dose Reports presented the same information. The most recent Daily Dose Report reviewed was the March 1, 2016 report, which is based on fourth quarter 2015 data and shows CGS in the fourth quartile with a CRE of 166 person-rem.

Monthly Department Meetings. The station's CRE value has been discussed in several, but not all, CGS Monthly Department Meetings over the past 15 months. The 24 month CRE rolling average was presented as "yellow" in the January 2015 through May 2015 Monthly Department Meetings. As previously discussed, the Monthly Department Meeting presentations were revised to conform to the Excellence Model Phase IV performance indicators in July 2015, following the outage, and the information presented at the MDMs was consistent with the revisions. From July 2015 through December 2015, the MDMs do not provide the rolling CRE data. This information continued to be monitored and tracked in the Business Plan, which as previously explained is available for all employees to view on the intranet.[20] The January 2016 MDM presentation references the CRE in noting how it impacts the CGS Index, explaining that the overall CGS index reflects a "[c]ontinued point loss for Collective Radiation Exposure (CRE)." The February 2016 MDM presentation resumed presenting the CRE rolling average and shows that CGS was in the "yellow" from January 2015 through April 2015 (CRE values of 136, 139, 139, and 135 person-rem, respectively). In May 2015, the CRE indicator entered the red with a value of 144 person-rem. From June 2015 through December 2015, the indicator remained in the red with a CRE value of 166 person-rem.

The CGS performance in radiation protection was also the subject of a recent D15 communication. On January 14, 2016 the D15 contained a "Communication Break: Radworker

[20] For example, the September 2015 Business Plan states: "Columbia's Collective Radiation Exposure (CRE) is now in 4th quartile for the industry with a value of 178 Person-Rem. The 2015 CRE goal for the industry is 110 Person-Rem. CR-330508 was initiated to document this movement into 4th quartile."

Practices Area of Concern." It discussed the fact that 88 condition reports had been initiated since September 2014 that documented human performance deficiencies in radiation worker practices, provided results of a common cause analysis, and summarized corrective actions being taken. With respect to CGS's quartile position, the communique stated:

> Columbia's CRE is currently in 4th quartile for the industry with a two-year rolling average of 166 Person-Rem. CRE reduction efforts have been outlined in Columbia's CRE/Source Term Reduction 5-Year Plan and it provides the framework and clear plan to improve CRE performance through the use of technology, process changes, CRE reduction initiatives and most importantly, **improved CRE/radworker behaviors.** [bold text in original]
>
> Every radworker, on every entry into the Radiologically Controlled Area (RCA), has a responsibility to help the station reduce CRE and demonstrate excellence in radiological work practices.

b. Communication of Radiation Protection Performance to the Energy Northwest Executive Board

Senior CGS management regularly updated the Energy Northwest Executive Board on CRE data and trends. For example, the July 22, 2015 CNO presentation to the Energy Northwest Executive Board contains a graph depicting the CRE data values (actual and projected) for January 2014 through December 2015, including the increase in CRE that resulted from the outage. The graph shows that April CRE was in the "yellow" quartile at approximately 135 person-rem, crossed into the "red" quartile in May 2015 at approximately 144 person-rem, reached 178 person-rem in June, and was projected to stay in the "red" through the remainder of 2015. The CNO reports to the Executive Board for the remainder of 2015 (August, September, October, and December) presented similar information.

The August, September, October, and December CNO presentations to the Executive Board included additional detail on how senior management planned to address the decline in radiation protection performance. Each of these presentations included a slide detailing "Key Actions" to be taken, and projecting when improved performance goals would be reached. For example, the December 2015 presentation states:

- Contributors
  - Refueling outage dose
- Key actions
  - Revise 5 Year dose reduction plan to include reducing source term and improving radworker practices
  - Senior Site ALARA Committee worker level sub-committee
  - Flood refueling cavity with Condensate Storage Tank

- Update Cobalt Component Replacement Procedure
- Chemistry Control and System Operation by improving Condensate and Reactor Water Cleanup Demineralizers

- Projected improvement
  - Full index points May 2017
  - Top quartile March 2019

The January 27, 2016 CNO report to the Board provides additional detail on management's plan to address the less than desirable radiation protection performance. In brief, the presentation states "**Columbia is currently in the fourth quartile for CRE performance and is lagging the industry in improving its dose performance**" (bold text in original), and details across multiple slides, the CGS "5 Year CRE Reduction Plan."

5. Human Performance

CGS measures station "human performance" and evaluates human performance trends for continuous improvement. Per CGS procedure (Standard-04, Event Free Days (EFD) Clock Program), a human performance event is an event or error that is caused, at least in part, by human error.

When a human performance event occurs, it is often discussed in terms of a "clock reset." There are three types of clock resets: Station, Department, and Crew, with Station being the most serious, followed by Department and Crew. A Clock Reset indicates how many days, months, or years has a Crew, a Department, or the Station has worked since its last qualifying human performance event.

In accordance with CGS procedure[21], CGS Human Performance personnel review plant condition reports or ARs and determine whether the documented condition is the result of a human performance error. The Human Performance Personnel then evaluate these conditions for potential reset of the Station, Department, or Crew EFD clocks. A color-coded, write-up is used to communicate each of the three types of resets: red sheet for a Station Clock Reset, yellow for Department, and blue for Crew (although per procedure, formal write-ups are not required for Crew Clock Resets).

Also in accordance with procedure, the Human Performance Manager is responsible for ensuring the appropriate distribution of Station and Department Clock Resets to CGS managers and supervisors. Managers and Supervisors are responsible for discussing Station and Department Clock Resets with their personnel, which typically occurs during a D15 morning briefing. Information regarding the Clock Resets is also linked to the written copy of D15 posted to the intranet.

[21] Standard-04, CGS Event Free Days (EFD) Clock Program, Sections 1.3 and 4.1.

a. Communications on Human Performance

Information on Clock Resets is communicated to CGS employees and the Energy Northwest Executive Board. The investigation included review of the CNO presentations to the Energy Northwest Executive Board, and the Monthly Department Meeting presentations to CGS employees, from 2015 and January 2016. All of those presentations provided the current count of "Station Event – Free Days Clock Resets" and "Department Event-Free Days Clock Resets," with the "notes" section of the slides further discussing any specific events that occurred in that month that resulted in any Clock Reset. Beginning with the February 2016 Monthly Department Meeting presentation, which utilizes the new DevonWay software program, the presentation identifies the number of Station Clock Resets in each month as well as the overall Human Performance Event Rate.

The presentations to the Executive Board and to CGS employees communicated the trending decline in the performance of the plant with respect to Station and Department Clock Resets. The trending decline in performance resulted from the three Station Clock Resets that occurred from May-December 2015. The Executive Board presentations showed this indicator in "Green" in the July, August, and September 2015 presentations; "White" in the October and December 2015 presentation; and "Yellow" in the January and February 2016 presentations. The Monthly Department Meeting presentations showed this indicator in "Green" in the July through October 2015 presentation, "White" in the November and December 2015 and January 2016 presentations, and "Yellow" in the February 2016 presentation.[22]

The presentations to the Board and to employees communicated the overall poor performance of the plant with respect to Department Clock Resets. The Board presentations showed this indicator in "Red" in the July 2015 – February 2016 presentations. For example, as stated in the September 2015 Board presentation, the site was performing far below expectations with respect to the number of Department Clock Resets it had within a twelve month period: "The current value for criteria meeting department clock resets in the past 12 months is 36 which is **NOT** meeting the goal of less than or equal to 8. CR 330066" (bold emphasis in original). In the Monthly Department Meetings to employees, the July 2015 presentation showed this indicator in the "Yellow" and all subsequent presentations through January 2016 in "Red." Beginning with the February 2016 Monthly Department Meeting, which was the first using the new DevonWay software, the presentation provided a breakout of the Clock Resets for individual departments, rather than a total count of Department Clock Resets (e.g., Operations and Maintenance were "Yellow"; Chemistry and Radiation Protection were "Green"; and Engineering was "Red").

i. Specific Human Performance Allegations

This section of the report addresses the specific allegations in Letter 1 concerning human performance, namely whether senior plant management ignored the decline in the company's standing as measured by the recent increase in human performance events – specifically a level one clearance order failure and the loss of diesel generator operability. The investigation found

[22] The apparent one month lag in the quartile and color presented in Monthly Department Meetings compared to those presented to the Executive Board results from the fact that Monthly Department Meetings occur on the first Monday of each month before the immediately prior month's data is available; Executive Board presentations typically occur towards the end of the month and can include the data from the immediately prior month.

that senior plant management has communicated with the CGS Staff and the Executive Board the specific events described in Letter No. 1 as well as the lessons learned from those events.

Between May 2015 and the conduct of this investigation, CGS experienced three Station Clock Resets resulting from three separate human performance events. Two of these three human performance events were identified in Letter 1: the level one clearance order failure and the loss of diesel generator operability. The third Station Clock Reset resulted from a subsequent clearance order failure.

The following three sections summarize the events that caused each of the three Station Clock Resets, and identify the communications made to CGS employees and to the Executive Board regarding each event.

(A) May 2015 Clearance Order Failure

On May 12, 2015, individuals proceeded to work on an energized system without the protection of a Clearance Order. Specifically, contractor supervision failed to accurately determine and implement clearance order requirements. The supervisor released the clearance order hold after incorrectly determining that no clearance was required. Craft technicians proceeded to the field with the understanding that no clearance was required. They began to "back off" a nut on a containment instrument air valve and heard a hissing sound. When the pressure release did not subside, they tightened the nut and contacted operations, who informed them that the system was pressurized.

On May 13, 2015, a red sheet communique on this Station Clock Reset was sent by email to all managers and supervisors, trend coordinators, and administrative assistants. That email directed the managers and supervisors to conduct a "mandatory stand down" on May 14, 2015 "to review station clock reset learnings." The red sheet summarized the event and contributing organizational shortfalls or precursors, identified immediate corrective actions and preliminary lessons learned, reviewed the portion of the excellence model raised by the event (accident free), and detailed the "enablers missed," including verification/validation, procedures/work instructions, supervisory oversight, and worker practices.

This Station Clock Reset was communicated to employees by additional means. The intranet copy of the May 14, 2015 D15 summarized the event, stated that a stand down would be conducted as a result of the event, and provided a link to the red sheet communique on this event. This incident was also discussed in the next Monthly Department Meeting in July 2015 (there was no such meeting in June due to the outage). The "notes" section of the presentation states:

> **How are we doing?** The goal of having no more than 1 criteria-meeting station clock resets is being met. There was ONE criteria meeting station clock resets and ZERO management discretion site clock resets during the month of May 2015. R-22 commenced May 9, 2015.
>
> **Cause:** 5/12/2015, Maintenance, AR 327575, Individuals proceeded to work on an energized system without the protection of a Clearance Order (Criteria - Facility Operation 4c.)

As noted, the event was captured in the corrective action system with corrective actions identified. The fact that a Station Clock Reset occurred in May 2015 was also noted in subsequent Monthly Department Meeting presentations. For example, the August 2015 presentation included a chart that showed a Station Clock Reset occurred in May 2015. This is a rolling chart showing Station Clock Resets for the prior 6-7 months, and the projection for future months. This incident was also discussed by the CEO during the August 31, 2015 all-hands meeting.

Information regarding the May 12, 2015 level one clearance event was also presented to the Executive Board. The June 24, 2015 CNO presentation to the Executive Board included information on "outage execution" for the then still ongoing outage. The presentation identified the "Level 1-Unprotected workers" as one of two recent clearance tagging events that earned a "thumbs down." The presentation also showed that AR 327575 was initiated to record the event. Information on this same event was included in the July 22, 2015 CNO presentation to the Executive Board. The "notes" section for the presentation slide showing one Station Clock Reset event in May 2015 states: "One event in May during the outage when contractor personnel proceeded to work on a pressurized system without a clearance order."

(B) September 2015 Loss of Diesel Generator Operability

On September 25, 2015, an electrician was assigned a support task to energize a material transport system hoist. When the electrician went to shut a disconnect with his right hand, he placed his left hand on nearby switchgear to stable himself and came into contact with another disconnect, which caused it to open and as a result a diesel generator and a power panel became inoperable. Alarms sounded, and the electrician closed the opened disconnect prior to contacting operations. After realizing what happened, the electrician contacted operations. The inoperability of the diesel generator required entry into an eight-hour shutdown action statement.

On September 27, 2015, a red sheet communique on this Station Clock Reset was sent by email to all managers and supervisors, trend coordinators, and administrative assistants. That email directed the managers and supervisors to conduct a "mandatory stand down" by close of business on September 28, 2015 to discuss the plant status control event. The red sheet summarized the event, identified immediate corrective actions and lessons learned, reviewed the portion of the excellence model raised by the event (event free), and detailed the "enablers missed," including worker practices and supervisory oversight.

This Station Clock Reset was communicated to employees by additional means. The September 28, 2015 D15 stated that a stand down would be conducted as a result of the event and provided a link to the red sheet communique on this event on the CGS intranet. This incident was also discussed in the November 2015 Monthly Department Meeting. The "notes" section of the presentation states:

> **4.) How are we doing?** The goal of less than or equal to 1 site clock reset during the fiscal year is being met. There was on station clock reset during the month of September 2015.

> **Cause:** 9/25/2015 Maintenance (ELECM), AR 337018, Inadvertently opened disconnect for PP7AAA (Criteria 1d).

The chart on the same page notes both this Station Clock Reset and the one from May 2015 from the prior fiscal year. As noted, the event was captured in the corrective action system with corrective actions identified. The fact that a Station Clock Reset occurred in September 2015 was also noted in subsequent Monthly Department Meeting presentations. For example, the December 2015 presentation included a chart that showed a Station Clock Reset occurred in September 2015 (as well as in May 2015).

The May and September 2015 Station Clock Resets were also discussed with employees during the "Human Performance Expo" held over the course of six days (on September 29-October 1 and November 16-18) in the autumn of 2015. All Energy Northwest employees and long term contractors were expected to attend the Expo. Senior management gave a "kick-off" presentation for the attendees, who then participated in dynamic learning activities and attended a wrap up session. The objectives of the Expo were threefold:

1. Communicate and understand where we are and what needs to be done to improve human performance.

2. Identify the organizational/programmatic causes, individual behaviors and lessons learned associated with a case study.

3. Reinforce the top causal factors of clock resets during the dynamic learning activities.

The senior management presentation included discussion on both the May and September 2015 Station Clock Resets. The senior management presentation also discussed the increased trend in Department Clock Resets, and the analysis of common causal factors for Department Clock Resets from 2014 through June 2015 conducted by the Human Performance department. The causal factor analysis determined that the top causal factors contributing to Department Clock Resets were inadequate use of human performance tools, supervisor oversight, failure to validate assumptions, and procedures/work instructions/work plan quality.

Information on the September 25, 2015 loss of diesel generator operability was also presented to the Energy Northwest Executive Board during the October 28, 2015 CNO presentation. Executive Board presentation slide 42 identifies that one station Clock Reset event occurred in September 2015. The "notes" section for that slide states in relevant part:

> **Problem Statement:** The goal of less than or equal to 1 site clock reset during the fiscal year is being met. There was one station clock reset during the month of September 2015.
>
> **Cause:** 9/25/2015, Maintenance (ELECM), AR 337018, Inadvertently opened disconnect for PP7AAA (Criteria 1d)

This slide also recapped the Station clock reset event from May 2015.

(C) December 2015 Clearance Order Failure

On December 6, 2015, work was being performed on a piece of equipment without the proper clearance order in place and while the equipment was still energized. This resulted in unintended movement of a motor operated valve, which caused damage to flexible conduits and created a potential for personnel injury.

On December 8, 2015, a red sheet communique on this Station Clock Reset was sent by email to all managers and supervisors, trend coordinators, and administrative assistants. That email directed the managers and supervisors to conduct a "mandatory stand down" by close of business that same day to review the level one clearance order failure. The red sheet summarized the event, identified immediate corrective actions and lessons learned, reviewed the portion of the excellence model raised by the event (accident free), and detailed the "enablers missed," including supervisory oversight, verification/validation, and procedures/work instructions.

This Station Clock Reset was communicated to employees by additional means. The December 8, 2015 D15 stated that a stand down would be conducted as a result of the event and provided a link to the red sheet communique on this event on the CGS intranet.

By email dated December 21, 2015, the Human Performance Program Manager communicated to all managers and supervisors that a Human Performance "Stand Up" would be conducted at the January 2016 Monthly Department Meeting on January 4, 2016, per the direction of the Plant General Manager, "to promote a renewed focus on safety and human performance as we start the new year." The Stand Up briefing was attached to the December 21 email, and linked in the January 2016 Monthly Department Meeting presentation slides. The Stand Up briefing material states in part:

> Unfortunately, since May 2015, we have had three significant events resulting in station clock resets. Two events involved Level 1 Clearance Order issues, where individuals began their work without adequate protection, and the other was a plant component status control event which resulted in an unplanned entry into an 8 hour technical specification shutdown action statement. Additionally, we've seen an increase in department clock resets.
>
> As we enter 2016 we must re-commit to excellence through improved behaviors and improved results – Excellence Phases I, II and III never end. It's critical to our futures and the best interests of ratepayers that we demonstrate that we're not just about achieving excellence – we're also about sustaining excellence, Phase IV.

The three Station Clock Resets since May 2015 were discussed in the February 2016 Monthly Department Meeting presentation slides, which contain the following information:

> **4.) How are we doing?**
>
> Columbia has had a total of three station clock resets in the past 18 months.
>
> December 2015: Work was performed on tower make-up motor operator 1 bravo [the piece of equipment at issue] without the proper clearance order in place and

while the equipment was still energized. This resulted in unintended movement of the motor operated valve which caused damage to flexible conduits and a potential for personnel injury (Criteria 4c, CR 340940).

September 2015: Electrician inadvertently opened an incorrect disconnect and then reclosed it resulting in entry into an eight-hour shutdown action statement (Criteria 1d, CR 337018).

May 2015: Contractor proceeded to work on an energized system without the protection of a clearance order (Criteria 4c, CR 327575).

As noted, the December 2015 Station clock reset event was captured in the corrective action system with corrective actions identified.

Information on the December 6, 2015 level one clearance order failure was also presented to the Energy Northwest Executive Board during the December 16, 2015 CNO presentation. Slide 5 of the presentation is titled "Station Clock Reset" and states:

- Work on a tower make-up motor operator performed without the proper clearance order and while the equipment was still energized. No personnel were injured.
- Mandatory Stand-Down
- Root Cause Evaluation in-progress
- Enablers Missed:
  - Supervisor Oversight: Supervisor did not ensure the clearance order provided adequate protection.
  - Verification/Validation: Clearance order was not validated to be correct.
  - Procedures/Work Instructions: The work package was not routed to Operations for review of clearance impact prior to the work being performed.

6. Phases of Excellence

Letter 1 also claims that senior plant management has "suppressed" CGS's decline in performance so that management could continue to say that CGS was in the "sustaining excellence" phase, or Phase IV, of the Excellence Model. This allegation is not substantiated. As discussed throughout this section, the investigation does not find that senior plant management has suppressed CGS's recent decline in performance as measured by the CGS Index and its component indicators.

Further, the status of the CGS Index does not dictate which phase of the Excellence Model the site is in. While the CGS Index is used as measure of performance, it was not used to determine whether the site should move from Phase III to Phase IV. According to the CNO, CGS transitioned to Phase IV in or around November 2014 after their last INPO evaluation. He

explained that this meant that "we are a plant that can focus on fundamentals while looking towards the future."

Furthermore, nearly all of the CGS employees interviewed stated that while the site started in Phase I of the Excellence Model, and moved to subsequent phases, the site is always in "all phases" of the Excellence Model. The Plant General Manager explained that the "Phases never end. All Phases are still active, but each phase has a different basket of indicators." This message is reinforced by senior plant management at employee meetings; leadership will ask at the meeting "what phase are we in" and the expected response is "all phases." Multiple presentations reviewed by the investigation team contain a slide depicting the Excellence Model phases, and clearly shows that all of the attributes from each phase carry onward into subsequent phases. **Attachment E** is slide 21 from the May 2015 Monthly Department Meeting and shows that the Excellence Model intends that all of the attributes from each Phase carry forward into subsequent phases.

Moreover, the CNO explained that, after the multiple performance issues that occurred during or resulted from the outage (over schedule, increased dose, stuck feedwater valve, reduced output, fuel defect), the CNO added the Phase III indicator "Successful Outage" to Phase IV, Sustaining Excellence, to keep focus on having a successful outage. This is evidenced by **Attachment F**, which is slide 16 from the November 2015 Monthly Department Meeting. In addition, the CNO stated that the Human Performance Expo held in Fall 2015 was intended, in part, to refocus on the attributes in Phase I, "Improving Behaviors." And at the December 14, 2015 all hands meeting, the CEO told employees that they needed to refocus on behaviors that have led them to excellence, which were instilled in the first phases of the Excellence Model. As explained by the CNO, "we'll learn from events and make changes, but we must keep looking towards the future."

In summary, because CGS has suffered some performance setbacks does not mean that the plant has regressed from Phase IV of the Excellence Model. Nor has management hidden these setbacks from employees so that it could keep saying it remains in Phase IV; management has not hidden the performance setbacks, and it reinforces that the plant is in "all phases" of the Excellence Model.

Allegation 2: **Nuclear safety: Management is making decisions to keep the plant running to stay on line at any cost — Senior Management made the decision to fix a huge valve while the plant was stuck at approximately 50% power — the engineering VP has stated the most likely cause of the fuel leaks was unwanted material introduced to the core during this valve repair**.

Response to Allegation 2:

A. Summary

This allegation is not substantiated. Management made the decision to work on a reactor feed pump discharge isolation valve (RFW-V-102A) at reduced power following a comprehensive decision making process that evaluated nuclear safety, industrial safety, and other pertinent factors. In addition, the investigation did not find that the Engineering VP stated that the valve repair was the most likely cause of the nuclear fuel leaks. Instead, all of the information reviewed in the investigation shows that the Engineering VP stated that foreign material, which could have come from any number of outage activities, including but not limited to the work on this valve, was the most probable cause of the fuel leaks.

The investigation team evaluated this concern by first reviewing the decision making process used to determine how and when to repair the reactor feed pump discharge isolation valve. This included reviewing various documents evaluating the options for the repair, site communications regarding the repair, and interviews with employees involved with the decision making. The investigation team concluded that, while continued generation was a factor, the overriding focus of the CGS decision was on ensuring that the recovery option chosen was safe from both a nuclear and personnel safety perspective. The investigation also found that, after the repair was completed, the site conducted a case study on the repair allowing participants to work through the decision-making on the valve. Managers and Supervisors have completed the case study; a similar program is planned for Engineering personnel.

With respect to the fuel failures, the investigation team reviewed the corrective action program documents and other related documents used to investigate the fuel leak. The investigation team also interviewed employees involved with the fuel defect investigation. Based on this information, the investigation team concluded that the cause of the fuel defect is unknown at this time, and indeed may never be known.

Recommendations:

- Management provide the case study on the decision making process to a broader and appropriate audience at the plant. This will assist employees with understanding the rigorous process used to evaluate the options and also provide them the opportunity to think through the decision process and how they would respond if they were the decision-maker.

- Communicate the results of this investigation to the work force.

B. Factual Findings

1. Decision to Repair Reactor Feed Pump Isolation Valve at Reduced Power

On June 30, 2015, as the facility was returning to full power following the summer 2015 outage, the operations staff attempted to bring the second reactor feedwater pump (RFW-P-1A) online. As the pump was brought online, no flow was indicated at the discharge of the pump. Without flow from the second reactor feedwater pump, the plant was unable to proceed to 100 percent power. Additionally, without the ability to rely on the second reactor feedwater pump, a SCRAM single point vulnerability existed. A cross-functional team was established to determine the cause for the lack of flow. The Team determined that the discharge isolation valve (RFW-V-102A), which had been closed to isolate the system for maintenance, had failed closed. Specifically, the valve disk remained stuck in its seat and had separated from its motor-operated stem.

The CGS Team used their Technical Issue Resolution Process to evaluate options for a path forward.[23] The Technical Issue Resolution Fact Sheet documented in Action Request ("AR") 332338 stated that its goal was to "Make a list of options for a path forward in order to get to 100% power. This may include making plans to operate in the interim at reduced power until a better time to shutdown to complete repairs fully." Lost generation was a concern at this point because of hot summer temperatures and a local power shortage due to insufficient available hydro power. However, all interviewed stated that if completing the valve recovery at power was unsafe from either a nuclear or industrial safety perspective, then it would not proceed. Additionally, a Bonneville Power Authority[24] representative was interviewed and he stated that while they are always concerned with having adequate generation, maintaining the CGS plant is a critical asset and maintaining it safely is of utmost importance. This representative stated that the CGS Team kept BPA apprised of the options being considered and he viewed CGS as acting in a safe and prudent manner as they worked through the recovery of this valve.

The Technical Issue Resolution team brainstormed a number of options, and the site took a series of non-intrusive actions to open the valve. CGS sought input from industry experts at Furmanite,

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[23] This investigation team questioned whether the Operational Decision Making ("ODMI") process was used to evaluate the options for working on this valve and were told that this process was not used. Instead, the work management decision making process was used, which relies on documenting decisions in accordance with OCC-03, Decision Making Process. Some of the OCC-03 decision making forms used during this evolution are included in AR 332338. Procedure SWP-MAI-03, Emergent Issue Management, directs staff to "Consider using the ODMI process to document the basis of decision on what power level the plant operates while repairs are made." Interviewees indicated that because the Outage Control Center ("OCC") was already established in support of the outage, there was no need to consult SWP-MAI-03. Note that SWP-MAI-03 provides that the OCC-03 process is also an acceptable means for documenting decisions. The Nuclear Safety Review Board ("NRSB") reviewed the decision making process and also questioned whether this decision should have been documented in accordance with the ODMI process. The NSRB concluded that "there was good technical input and communication around the decision to hot tap" "however the assumptions used to make that decision were not documented as required by station process procedures." The NSRB requested that the decision making activities be evaluated and the results of that evaluation be presented at the next Operational Excellence Meeting. This recommendation is documented in AR 340266-02.

[24] Bonneville Power Authority has obligations for generation, marketing, and delivery of power by the federal system in the Northwest.

a firm with expertise in working on pressurized systems including performing freeze seals, pipe repairs, leak seals, and hot tapping[25], and peers from the Utilities Service Alliance ("USA"). Ultimately, three viable options for repairing or recovering the valve were identified. An Engineering Technical Evaluation was performed to evaluate the risks and benefits of each option. The three options were: 1) performing a "hot tap" by drilling holes into the bottom of the valve to allow rods to be used to push the valve disk out of its seat; 2) replacing the valve or its internals; and 3) cutting out the valve and replacing it with pipe. The first option could be completed at power, while the other two required the plant to be shut down. Table 1 below provides the initial assessment of these three options, which was documented in the Engineering Technical Evaluation.

The recommended solution was to pursue Option 1, the hot tap. If this was unsuccessful, then the plant would operate at reduced power until there was a lower power demand and pursue Option 2 as the preferred contingency. Evaluation and planning for of all three options proceeded in parallel. Each option had its difficulties as shown in Table 1 below. According to those interviewed, the primary challenges with Option 2 and 3 were personnel and plant safety due to the size and configuration of the valve. The valve is installed upside down approximately 20 feet in the air, and the components that would need to be removed weighed approximately 2000 lbs. The location and weight of the components required complex rigging. This presented a potential personnel and plant hazard due to the potential for dropping the components or hitting nearby equipment. Additionally, the same valve was not available for replacement (a 42 week lead time was estimated for an identical replacement) and an available replacement valve was not an optimal replacement, being approximately 10,000 pounds heavier than the currently installed valve. There were also concerns with cutting into the pipe because of a technical issue called "cold spring" whereby once you cut the pipe the stresses may cause the pipe ends to spring apart and be difficult to put back together. If either of these options was to be pursued, significantly more planning and evaluation was required. Thus, shutting down to immediately implement either Option 2 or 3 was not feasible.

Interviewees were asked whether any concerns were raised regarding Option 1. All interviewees shared concerns that were raised. They also indicated that each time a concern was raised "we would stop, vet the concern, and come up with ways to address it." Some of the key concerns raised included: (1) foreign material intrusion; (2) safety of personnel drilling into the valve due to high temperatures and pressures of the system fluid; and (3) weight of the equipment installed on valve RFW-V-102A. Each of these concerns was addressed either through design of the hot tap assembly or engineering analysis leading to mitigating actions. In addition, a full scale mockup of the valve/pipe configuration was built and personnel were able to practice implementing the "hot tap" prior to the actual field work. Interviewees stated that although concerns were raised throughout the design process, by the time the design was complete and mitigating actions identified, employees were satisfied with the resolution. None of the

[25] A "hot tap" is when a drill is used to cut a hole into an in-service, under-pressure system. This is done without service interruption.

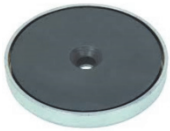
interviewees involved with undertaking the hot tap expressed concern with moving forward once the decision was made.[26]

Of relevance to the concern raised in the letter, interviewees noted that one of the major engineering concerns was whether working on RFW-V-102A at power would introduce foreign material into the system potentially impacting system components or the fuel either from 1) damaged valve stem pieces or 2) drilling material. An engineering evaluation was completed to document the risks associated with foreign material that may be generated and to provide recommendations for mitigating this risk. This evaluation was supported by a flow model developed by a third party vendor, Kalsi Engineering, which evaluated whether the debris from the broken valve could be transported from the valve bonnet through the system. This flow model determined that system flow would not be able to entrain loose debris from the stem and disk larger than 0.02 inches. This conclusion was significant because Global Nuclear Fuel, the fuel manufacturer, advised that the range of concern for fuel fretting (a mechanism that leads to fuel leaks) is a concern for debris in the size range of 0.2 to 0.4 inches. Thus, the risk to the fuel from loose debris from the valve stem damage was not a concern because the system flow could not entrain and thus transport debris in that size range.

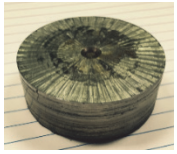
The engineering evaluation also evaluated the risks of foreign material from the drilling process causing fuel failures. The evaluation concluded that the overall risk without any mitigating actions was high and that the risk would be lower if the plant was shut down prior to work on the valve. The evaluation identified methods for reducing risk of performing the work at power including using borescope vacuuming, using tools and techniques that ensure that machining or drilling produces debris (referred to as "swarf") that is very small, and performing a second hot tap to create a debris flushing path.

Ultimately the team developed a FME plan to reduce and remove any debris during the drilling process. The plan included reducing the swarf by performing the drilling in two steps. In the first step, a pilot hole was drilled to a minimum wall thickness and the swarf was removed prior to breaching the valve body. In the second step, a hole saw was used. The benefit of the hole saw was that it did not produce long filaments of swarf. Instead, it produced a fine dust and a piece that looks like a hockey puck, which could be easily removed. In addition, the hole saw was magnetized to catch the puck and the fine dust.

Hole saw



magnet



puck

Once the drilling was completed the interior of the valve was vacuumed.

[26] It should be noted, however, that this issue continues to resonate at the site and some individuals remain skeptical about using the hot tap to open the valve. This will be discussed further in the Phase II assessment report.

The decision to proceed with the hot tap recovery effort was challenged in several forums before work was allowed to proceed. In addition to daily management briefings and discussions, there were formal management challenge meetings. First a High Risk Challenge Meeting was held on July 8, 2015 because the work was identified as an "Infrequently Performed Test or Evolution", which required development of a High Risk Work Plan. A High Risk Challenge Meeting is a forum where personnel who are independent of field activities challenge the planned activity to ensure that it is fully vetted and that the nuclear, radiological, and industrial safety risks have been identified and mitigating actions identified. According to an interviewee, these meetings are typically an hour long, but in this case the meeting ran two or three hours because the leadership team wanted to ensure that the process was safe and well thought out before proceeding. Furthermore, two Plant Operations Committee Meetings were held to review the High Risk Work Plan and ensure that the team was ready to proceed safely. The Plant Operations Committee includes management-level individuals from each department, independent of the field activities, and its focus is on nuclear and industrial safety. Once the Plant Operations Committee concluded that the risks had been mitigated and the evolution was able to proceed safely, it recommended approval to proceed.

The overall design and decision-making process took several weeks. The thorough process used demonstrated a commitment to nuclear and personnel safety. Some challenges were encountered during implementation of the hot tap option, but it was ultimately successful and the plant returned to full power on July 22, 2015.

Site personnel were kept apprised of the progress being made on this issue through various communications. The Plant General Manager sent out a communication to the site on June 30, 2015 explaining that the reactor feedwater pump discharge valve couldn't be opened and that a team was researching methods to open the valve without having to take it apart. He stated that if they cannot find a suitable method to open the valve without disassembly, the unit would need to be taken off-line to affect a repair because the valve could not be isolated while at power. On July 6, 2015, the Plant General Manager provided an update reporting that "a dedicated team of employees from Engineering, Maintenance, and Construction & Project Management developed a plan to repair the valve while we remain online." He explained the repair method and stated that in the event this method is not successful, the plant will need to be shutdown to perform a more complex repair. He noted that planning was under development to take the unit offline to perform the more complex repair if needed. On July 11, 2015, the Plant General Manager provided an update stating that the team continued to work on the "hot tap" repair of the valve. He stated that the hot tap approach "has received a lot of detailed analysis and challenge by senior management, the enterprise risk process, high risk work process and the Plant Operations Committee." He also discussed that the team had "looked very closely at the potential to introduce foreign material into the system during this repair and, based on feedback from our various reviews, will modify the equipment to further reduce this possibility." He also stated that CGS had also "closely examined other repair options, which may still be used if the "hot tap" is not successful." And he went on to describe the other options that had been considered and the risks of implementing those options. In the end he stated "Based on all the information available, we have selected the "hot tap" as the option with the highest chance of success, while minimizing industrial safety and other constructability concerns and with adequate nuclear safety margin." This communication ended with "If anyone has concerns or ideas please do not hesitate to come forward and talk with your leadership or directly to the outage command center.

We are approaching this carefully and deliberately to make sure the repair is conducted safely in every way."

Finally, on July 16, 2015, the CNO sent out a video to the entire site regarding the repair of the valve. The email transmitting the video stated that "This is an important and challenging evolution for the station so I wanted to provide some insights into our decision-making process." This investigation team viewed that video, which detailed each of the options considered, explained the pros and cons of each option, why the site chose the hot tap option, and the extensive evaluation and planning performed before implementing that option. In addition to these communications, since the repair was completed, the site has completed a case study involving this valve with the site Managers and Supervisors and planned to present similar training to engineering. The case study provides an opportunity for trainees to work through the decision-making on the valve. The CNO also presented similar information to the Board on this issue in his July 22, 2015 and August 27, 2015 reports.

2. Cause of Fuel Leaks

In early September 2015, an indication of a potential fuel cladding defect was identified. In particular, an increase in Xenon (Xe-133) levels was detected in off-gas samples. However, other parameters used to identify a fuel defect were not triggered. The increased Xe-133 levels were entered into the corrective action program and a Failed Fuel Management Team was formed to track the investigation into the potential for a fuel defect. The Technical Issues Resolution Process was entered to address the issue. The conclusion was that the elevated Xe-133 levels were most likely due to a very small, tight fuel defect. CGS consulted with industry peers, industry fuel experts, and the fuel vendor who all agreed that there was likely a small fuel defect. A series of actions were taken to identify whether and where a fuel defect existed. Between November 8 and 21, two fuel defects were detected and actions taken to manage those defects. These defects are reflected in the CGS Performance Index beginning in November 2015. CGS developed and is implementing a Fuel Failure Management Plan to monitor and take necessary actions to address the fuel defects.

An apparent cause evaluation was completed to determine the cause of the fuel defects and develop any additional corrective actions. The apparent cause stated that "the cause of the failure will not be determined until after the fuel has been sipped, a specific fuel assembly identified, and a failed fuel examination is performed." Fuel sipping will be performed during the next outage and actions will be taken until then to manage the impacts of the fuel defect.[27] The apparent cause evaluated four potential causes for the fuel defect: 1) debris fretting from foreign material; 2) fabrication defect; 3) crud/corrosion; and 4) pellet-clad interaction ("PCI") failure. The apparent cause identified that the "most likely cause identified is debris fretting of the fuel clad from foreign material." The apparent cause noted that debris fretting is the predominant means of fuel failure in the Boiling Water Reactor fleet and that the small clad defect is consistent with debris as the potential primary failure mechanism.

The apparent cause investigation identified a list of potential activities that could have led to foreign material entering the fuel. The apparent cause identified at least twenty valves that were

[27] Columbia Generating Station is licensed to operate with fuel defects.

worked on in the May-June 2015 outage, including RFW-V-102A, that had the potential to introduce foreign material into the reactor vessel. The apparent cause investigation concluded that a slight chance exists that debris from the reactor feed pump discharge isolation valve (RFW-V-102A) broken stem and/or wedge could have made it to the reactor vessel. The apparent cause concluded that all other valve work had internal cleanliness which would have identified and removed all FME from the system prior to closure. The investigation also identified that emergent work performed during the outage replacing portions of the Reactor Water Cleanup (RWCU) piping presented a potential for debris to enter the reactor from pipe cutting and welding. In addition, the apparent cause team identified that the High Pressure Core Spray system was used to facilitate plant flood up during the outage, which is not the normal process for flood up, and could have introduced foreign material from the Condensate Storage Tank. Based on review of the apparent cause investigation, it is premature to conclude that 1) foreign material is the cause of the fuel defect and 2) that the foreign material came from the work on the reactor feedwater pump discharge isolation valve.

Furthermore, personnel involved with both the work on the reactor feedwater pump discharge isolation valve and the investigation into the fuel leak stated that they thought this work was not the most likely candidate for introducing foreign material due to all the care taken in the foreign material plan to prevent the introduction of foreign material. None of the individuals interviewed by Pillsbury stated that they heard the Vice President of Engineering state that he believed the foreign material came from this valve; rather they believe it's more likely that he said that the most probable cause of the fuel defect was from debris, without definitively identifying the source of the debris. The Vice President of Engineering stated that while he could not say with certainty that he never stated that the cause of the fuel failure was from work on the reactor feed pump discharge isolation valve, he also thought it was more likely that he said it was from debris, without definitively identifying the source of the debris, because he did not believe that this work on the reactor feed pump discharge isolation valve was the most likely source.

Letter 3 states that the anonymous allegers "agree in principle with the investigation[']s results" on this allegation. However, the allegers maintain that foreign material "is the most likely cause" of the fuel defects with "the feed water valve being option '1A'". The investigation also found that the most likely cause was FME, but did not find that the Vice President of Engineering stated that the most likely cause of the FME was from the work on the feedwater valve as alleged in Letter 1. In Letter 3, the allegers point to a September 20, 2015 email from the Engineering Vice President that identifies the potential causes of the fuel defects. The email states that the "most likely cause" of the fuel defects "is FME," and enumerates options "a", "b", and "c" for the potential sources of the foreign material. We do not interpret the enumerations as a ranking of the most likely causes of the foreign material. But even if it were a ranking, it is not true that the feedwater valve is identified as option 1a. The email lists "Valve work" as option 1a, and proceeds to identify no less than four valve jobs performed during the outage as potential sources of the FME. The email states in relevant part:

> Valve work – Of course we hot tapped the FW101A during start up (note the tap was vacuumed out since pressure did not appear in the cavity between the disks). We also did significant in-body work with Crane. The RHR V-8 seat work, and

the HPCS V-11 took significant work, and other valve and machining work by Crane and Continental.

In addition, the plant is currently evaluating whether additional causes beyond outage-related activities were potential sources of foreign material. AR 00346741 was initiated on March 23, 2016 and is entitled "CR 336352 does not evaluate all possible [Foreign Material Intrusion] for fuel defect." AR 00346741 explains that "Apparent Cause Evaluation CR#336352 discusses the four potential causes for Foreign Material Intrusion (FMI) but only has actions to address one of the items, the [Foreign Material Exclusion] Program. AR 00346741 states that three other potential ways for foreign material to enter the core exist: system degradation, system cleanliness, and plant operation with respect to putting water into the core. The AR states that "Columbia needs to further examine possible Foreign Material Intrusion paths and document the results in a revised ACE." For one example, the AR identifies "COND-P-2C suction strainer degradation" as a potential source of foreign material, explaining that "Recent AR#286286-02 identifies strainer parts in the Feedwater Heater 6B with a path to the reactor if there is debris." Thus, contrary to the assertions in the allegation Letters, it is not necessarily the case that outage-related activities introduced foreign material into the reactor system. The cause for the fuel defects is still to be determined.

In sum, the CGS staff was faced with a challenge when the reactor water feed pump discharge valve failed to open preventing the plant from proceeding to one hundred percent power at the end of the outage. The team evaluated several options for repairing/recovering the valve to allow the plant to proceed to full power. The team thoroughly evaluated the nuclear and industrial safety aspects of the chosen option and developed mitigating actions prior to proceeding. Introduction of foreign material into the reactor vessel was a key concern that was identified and evaluated, and a specific foreign material plan was developed to mitigate that concern. While there is a possibility that this work led to the fuel defects, this will not be known until the plant shuts down and performs fuel sipping in the next outage.

Table 1 Risk/Benefit Assessment of Valve Recovery Options

Option/Description	Risks	Benefits
Option 1 (At Power "Hot Tap"): Furmanite was contacted and with EN has been refining a design using a push rod assembly to displace the wedge (disc). The assembly would clamp to the valve and provide force to the bottom of the wedge through two hot-tapped holes. In addition, the pressure would be equalized around the valve and heat applied to reduce thermal binding. This method allows Columbia Generating Station to remain online and resume 100% power operations if successful.	1) Force applied to wedge is less than half the valve operator capability. It may not be enough. 2) Foreign Material from drilling. 3) Hot tapping a high pressure line has safety risks that must be mitigated. 4) Applying a large force through a modified pressure boundary presents risk to the pressure boundary.	1) Can be completed without shutting down. 2) Allows plant to resume 100% power. 3) This is the fastest solution and is capable of being implemented within a week.
Option 2 (Shutdown Replace Valve/Internals): Leave as-is and schedule a shutdown to fix when needed parts are available. (Replacement valve from Pasco warehouse under evaluation; replacement wedge and stem have long lead times)	1) Plant continues to experience 35% loss of power generation until parts arrive. 2) Plant continues to experience feed water system loss of redundancy until parts arrive. 2) If replacement parts are used reassembly is complex. Rotating valve to horizontal or vertical may be advantageous.	1) Allows plant to resume 100% power. 2) Full functionality would be restored.
Option 3 (Shutdown Replace Valve with Pipe): Schedule a shutdown to open the valve and remove broken parts, then reassemble the valve without the wedge.	1) Loss of valve function. 2) Complex and dangerous disassembly/reassembly. 3) Wedge still needs to be removed or cut out. 3) Potential for a longer shutdown than full valve replacement.	1) Allows plant to resume 100% power. 2) Parts are on hand to perform this work.

Allegation 3: **The industrial safety metric was changed after an industrial safety accident at the Industrial Development Complex**.

Response to Allegation 3:

This section of the report addresses the following allegations from Letter 1 concerning industrial safety: whether (1) senior plant management communicated the facts and circumstances of an August 2015 accident at the Industrial Development Complex ("IDC") to Energy Northwest employees and the Board; (2) senior plant management changed how it communicated the number of hours worked since the last lost time accident after the August 2015 IDC accident to avoid counting that accident as an Energy Northwest lost time accident; (3) the alleged failure to communicate the details of the August 2015 IDC accident caused, in part, the December 2015 supervisor slip and fall incident, and senior plant management ignored or failed to communicate the December 2015 supervisor slip and fall incident to Energy Northwest employees and the Board.

Letter 3 states that the anonymous allegers' "concern is that the injury was deliberately downplayed and the board not briefed" because of "two motivations": (1) the Energy Services and Development ("ES&D") Manager undertook an effort to ensure the injury was not recordable to maximize his at-risk compensation and (2) the CEO intentionally did not mention the injury for months while specifically presenting the "stellar" safety performance of the organization to a multitude of internal and external audiences.

In brief summary, the investigation did not substantiate the claim that senior management was not transparent with Energy Northwest personnel about the accident. However, communications on the accident should have been improved and made more timely, including by promptly notifying the Executive Board. The investigation did not substantiate the allegation that senior management changed how it calculated lost time accidents after the accident to avoid counting it. The accident did not count as a lost time accident against Energy Northwest and therefore would not affect the number of hours since the lost time accident for either Energy Northwest or Columbia. In addition, the CEO changed his communications on hours since the last lost time accident to reflect only CGS before the accident. Further, senior management determined to treat the accident as a recordable against the Energy Services & Development ("ES&D) division, and the accident is in fact counting against ES&D asset performance and negatively impacting "at-risk compensation" ("ARC") for those Energy Northwest employees with ES&D responsibilities, including (for examples) the ES&D General Manager and the CEO.

These allegations are each addressed in turn below.

I. Transparency on the August 2015 Contractor Employee Accident at the Industrial Development Complex

A. Summary

The investigation did not substantiate the allegation that senior management was not transparent with Energy Northwest personnel about the accident, or that Energy Northwest personnel could not learn from the event. A contractor employee suffered serious injury while working at the Energy Northwest Industrial Development Complex ("IDC") on August 24, 2015. A resulting

Action Request ("AR") 335326 was initiated the same day of the accident. The Accident Investigation Report prepared by the contractor, which described the accident and its identified causes, was appended to the AR. Both the AR and the Accident Investigation Report are available in the corrective action system. Based on the information in the AR and the Accident Investigation Report, the lessons learned from the accident were discussed in the September 2, 2015 "Daily15" or "D15" briefing, which is a daily briefing conducted by each work group. A copy of the D15 is available on the company intranet, and that copy references AR 335326. The lessons learned from the accident were also shared in a September 17, 2015 Energy Northwest News article published by the ES&D General Manager, who has responsibility for the IDC. The article summarized the accident, explained the identified causes, and reinforced the company's expectations that all employees remain focused on safety. The EN Newsletter is sent to employees and members of the Executive Board and Board of Directors.

The investigation also identified instances where Energy Northwest's communications to employees on the accident were not adequate. Both the September 2, 2015 D15 and the September 17, 2015 EN Newsletter article should have been issued sooner. The department clock reset communique (the "yellow sheet" on the incident") that was prepared by ES&D was not distributed by Human Performance in accordance with practice and procedure. The individual responsible accepted responsibility and explained that the communique got "buried in a mountain of emails" during a particularly busy time period. The ladder fall accident was not discussed during the quarterly all-hands meeting on August 31, 2015. Third, based on a review of the available meeting presentation slides, this incident does not appear to have been discussed at the September 2015 Monthly Department Meeting.

The investigation also found that the ladder fall accident was not immediately and appropriately communicated to the Energy Northwest Board of Directors or the CEO. Other members of senior plant management (including the ES&D General Manager, the CNO, the Vice President of Operations, and the Manager of Regulatory Affairs) were provided details of the accident on the evening of August 25, 2015 by email from the Human Performance/Industrial Safety Supervisor. The ES&D General Manager stated that he and his division did everything required with respect to reporting the incident through site channels. However, he said that he failed to immediately notify the EN Executive Board of the ladder-fall accident, and failed to discuss it with the members of the Board attending the Executive Board strategic planning retreat on August 26-27, 2015. The General Manager stated that, in hindsight, he should have communicated the accident to the Board at that time.

The CEO stated that he was not immediately notified of the accident. At the time of the accident, there was no specific procedural requirement that the CEO be notified of such an incident from the non-nuclear side of the Energy Northwest organization. The CEO stated that he directed the CNO and the ES&D General Manager to ensure that applicable procedure was revised or a new one created requiring that he be notified in the future. That requirement has since been implemented in General Business Procedure GBP-COM-06.

Recommendations:

- Review the facts and circumstances of this event and document identified shortfalls in the corrective action system. Issues to be evaluated include:

- The failure to transmit yellow sheet communique on the Department Clock Reset should be documented in the corrective action system (the CNO stated that it would be at the conclusion of this investigation).

- Whether procedures are adequate to ensure that an oversight by one individual does not result in a failure to communicate on a serious event.

- The D15 occurred 10 days after the event. Determine if sufficient information existed prior to that time to support an adequate D15 (particularly in light of the serious nature of the injury). Even if the timing of the D15 was appropriate, reinforce expectations regarding prompt communication of serious incidents.

- Same issues with respect to the EN Newsletter article and the draft yellow sheet communique, which were dated September 17, 2015, 24 days after the event.

- Reinforce with contractors the company's expectations with respect to fall prevention requirements and other relevant safety measures for work performed at Energy Northwest.

- The Executive Board should confirm its expectations of the senior management team regarding the timing and the types of industrial accidents that should be communicated to the Executive Board.

B. Factual Findings

Energy Northwest hired K-5 Contracting to perform roofing work at the IDC. K-5 Contracting was experienced in the roofing work being performed, and had previously been hired by Energy Northwest to perform similar work on multiple occasions. On August 24, 2015 an employee of contractor K-5 Contracting was descending down a ladder being used to access a roof at the IDC, which is an Energy Northwest property separate from Columbia Generating Station ("CGS"). While descending the ladder, the contractor employee missed a ladder rung or lost his balance and fell from the ladder, apparently resulting in an injury to at least one of the employees' wrists. The contractor foreman took the employee to the local hospital for treatment. Based on information subsequently learned from the contractor company, the individual suffered two dislocated elbows and two fractured wrists. An orthopedic surgeon was not on call to treat the wrist fractures, and the hospital released the individual to a co-worker to be driven to a hospital in Seattle for further treatment (understood to be having pins inserted in one of the individual's wrists).

The same day of the accident (August 24, 2015), Action Request ("AR") 00335326 was initiated in the Columbia Generating Station corrective action system. The AR states that on August 24, 2015, the IDC Supervisor "was notified immediately of the situation. Work was stopped for the day. [The IDC Supervisor] notified Industrial Safety, [his] supervisor, and the General Manager. [The IDC Supervisor] also notified the contractor owner." Also that same day, an Industrial Development Supervisor called and left a message on the Industrial Safety hotline that an accident occurred, and that an AR had been initiated.

K-5 Contracting prepared an Accident Investigation Report, which is dated August 25, 2015. The Accident Investigation Report is appended to AR 335326 and is available to any CGS employee. The Accident Investigation Report states that the contractor's typical practice for accessing a roof is using a scissor lift, as the contractor did while accessing two other roofs the same day of the accident. However, due to the ground conditions near the building of the third roof to be accessed, a field decision was made to use a ladder instead of a scissor lift. The contractor's standard practice for ascending or descending a ladder is for fellow employees to hold the ladder for each other. This did not occur while the contractor employee was descending the ladder. In addition, the Accident Report notes that, although a fall protection plan was discussed and reviewed that morning during the tailgate safety meeting, ladder safety was not specifically addressed. The Accident Report does not discuss the extent of the employee's injuries.

The Accident Investigation Report concluded:

> Changing typical procedure and not readdressing the fall protection plan is where supervision failed. Prior to accessing the roof, a quick safety meeting should have been done to discuss ladder safety. This may not have prevented the accident in discussion as it looks as if it was an employee mishap. Future supervisor training will include addressing potential safety issues anytime field decisions are made that change normal operating procedures.

Also on August 25, 2015, the Human Performance/Industrial Safety Supervisor emailed members of senior management, including the ES&D General Manager, the CNO, the Vice President of Operations, and the Manager of Regulatory Affairs. Among other things, the email summarized the information provided in the Accident Investigation Report, stated that both Energy Northwest and the contractor agreed that the accident would be reported by the contractor on its OSHA 300 form, and provided a status update on the injured worker learned from contractor management (both elbows dislocated, one forearm fractured, and one severely fractured wrist requiring surgery).

Lessons learned from this accident were shared with CGS employees through two additional means. On September 2, 2015, the "D15" briefing highlighted the roofing contractor accident. The D15 is a daily discussion that each work group holds to discuss "thumbs up" and "thumbs down" activities at the site. Although there is no procedural requirement that an incident be discussed at a D15 within a certain time frame, in this case, the discussion of the accident in the D15 did not occur until over a week after the event.

The work groups are provided a written summary of the items to discuss during the D15. The September 2, 2015 D15 states in relevant part:

> IDC hired an experienced roofing contractor who has performed [the] same work for EN multiple times. IDC supervisor briefed the contractor owner and on-site supervisor on EN safety requirements, which are also covered in the contract document. Contractor employee fell while descending ladder from rooftop. The injuries sustained required off-site medical treatment which was reported by the business owner to [Washington State Department of Labor & Industries]. The

contractor completed the incident report. This is not a recordable or lost time injury against EN. CR 335326

Enablers missed: Supervisor oversight: Contractor supervisor not in line of sight at time of incident.

Worker Practices: Employee failed to follow safety procedures; Eyes on Path.

On September 17, 2015, the General Manager for Energy Northwest's Energy Services & Development ("ES&D") division (who has oversight for the IDC) published an article entitled "Learn From Ladder Fall" for the EN News newsletter. All employees receive an email that links to the weekly EN News newsletter, and any news updates. Members of the Energy Northwest Executive Board and Board of Directors receive the EN News newsletter. Mr. Gaston's article summarizes the ladder fall accident that occurred at the IDC on August 24. The article states that it was the "result of a worker losing focus on what he was doing," and that the worker "did not follow either Energy Northwest or his own company's safety rules, and he fell." The article concluded asking EN personnel to "use this safety operating experience to redouble [EN's] efforts at maintaining focus on safety – both in the workplace and at home."

Also on September 17, 2015, the ES&D division prepared and sent a "yellow sheet" Department Clock Reset communique to the Energy Northwest Human Performance Department on the ladder fall accident for broader distribution, in accordance with Energy Northwest Procedure (Standard-04, Event Free Days (EFD) Clock Program, Section 4.3.). The Human Performance Department is to distribute by e-mail the yellow sheets to all Energy Northwest Managers and Supervisors, so they can conduct a "stand-down" with their work groups to discuss the event, in accordance with procedure. In this case, the yellow sheet for the ladder-fall incident was not distributed to Energy Northwest Managers and Supervisors. The individual responsible for such distribution took responsibility for the failure, explaining that the email containing the yellow sheet was overlooked among the abnormally large amount of emails she received during that time period and additional work on her plate due to the roll-out of the Human Performance Expo later that month.

An AR has not yet been initiated on the failure to send out the yellow sheet communique on the Department Clock Reset. The CNO learned that an AR had not been initiated at the time he also learned of the failure to transmit the yellow sheet, both of which occurred upon review of the allegations at issue here. The CNO stated that an AR will be initiated at the conclusion of this independent investigation.

The investigation included review of a video recording of the August 31, 2015 All Hands Meeting. The ladder fall accident was not mentioned by the CEO or the ES&D General Manager.

The investigation included a review of the slide presentation for the September Monthly Department meeting. These meetings occur on the first Monday of every month. Each department is provided the same slide presentation for the meeting. The slides discussing safety incidents for August 2015 do not mention the ladder fall accident at the IDC.

The EN Executive Board held a Strategic Planning retreat on August 26-27, 2015. The General Manager of ES&D attended the retreat, but did not brief the EN Board members attending the retreat on the accident. He stated that personal injuries that may rise to the level of an OSHA recordable, a lost time injury, or a fatality should be reported to the Executive Board immediately. The General Manager accepted responsibility for failing to immediately notify the Executive Board.

In addition to the fact that the Executive Board was only notified of the accident only through the EN Newsletter, some Executive Board members expressed concern with the fact that they were provided insufficient details about the severity of the accident, and that it was described much less severely than warranted.

The CEO stated that he too was not immediately notified of the accident. He attributed this lapse to the fact that there was no procedural requirement for him to be notified of such an accident occurring at the non-nuclear side of the organization. For the nuclear side, the CEO stated that Operations Instruction 34 did require that he be notified were such an accident to occur at CGS. The CEO stated that he directed the CNO and the ES&D General Manager to ensure that the applicable procedure for ES&D was revised, or a new one created, to require that he be notified in the future.

Since the ladder fall accident, General Business Procedure GBP-COM-06, Chief Executive Officer Event Notification, was revised by adding a "Matrix of Events and Notification Requirements" to specifically require that the CEO be notified within specified time periods of certain events. Relevant here, the CEO must be notified within four hours of an "Industrial injury or accident that could lead to an OSHA recordable event, restricted duty or lost time." This revision took effect in March 2016.

Pillsbury does not make any factual finding on whether Energy Northwest personnel would have had "a better learning moment" had the extent of the individual's injuries been shared with them, as claimed in the third allegation Letter. This assertion is arguably true. However, no procedural requirement exists requiring that the extent of an individual's injuries be reported to the site. While Energy Northwest personnel verbally received details on the individual's injuries from his employer, Energy Northwest was not provided (nor was it required to be provided) any official documentation from the medical provider on the extent of the individual's injuries. In short, Energy Northwest would have been relying on undocumented hearsay were it to have communicated the individual's injuries to the site. Moreover, reporting medical information raises questions of medical privacy.

From a Human Performance perspective, the company should take action to prevent all accidents, whether they result in serious, minor, or no injury. Here, the company did so. Energy Northwest personnel appropriately communicated the fact that an accident occurred, the causes of the accident, and the lessons learned from the accident to prevent its recurrence.

II. Lost Time Accident Classification

A. Summary

The investigation did not substantiate the allegation that Energy Northwest changed its communications concerning the number of hours worked without a lost time accident from millions of hours worked at Energy Northwest to millions of hours worked at Columbia Generating Station (CGS) after the independent contractor fell from a ladder at the IDC. The investigation found that the accident was not recordable to Energy Northwest under Occupational Safety and Health (OSHA) regulations and therefore would not affect the calculation of the number of hours worked since the last lost time accident for either Energy Northwest or CGS. The accident was recordable to, and reported to OSHA by, Energy Northwest's contractor, K-5 Contracting.

The investigation found that the Energy Northwest CEO changed his communications on hours since the last lost time accident to reflect only CGS, and not all of Energy Northwest, before the ladder fall accident. Therefore, the allegation that senior plant management changed the way it calculates lost time accidents after the ladder fall accident is not substantiated.

However, the investigation did find that following the ladder fall accident, some personnel debated whether the ladder fall accident at the IDC should count as a lost time accident for Energy Northwest, and whether it would impact the calculation of hours since the last lost time accident. Energy Northwest's Injury Classification Board ultimately concluded that the lost time accident did not count against Energy Northwest.

Although the ladder fall accident did not count against Energy Northwest as an OSHA recordable event or lost time accident under OSHA's regulations, the company determined that the accident would be reflected as an ES&D recordable accident. Consequently, the accident is negatively impacting the Industrial Safety portion of the ES&D asset performance. Thus, contrary to the claims made in the allegations, the ladder fall accident counts against the ES&D "at-risk-compensation" ("ARC") for those employees with ES&D responsibilities.

Recommendations:

- Alignment is needed on what counts as a lost time accident. A clear understanding of what counts as a lost time accident would have prevented the debate over whether the lost time accident counted against Energy Northwest (it did not), and would foreclose opportunities for casual observers to question whether the company is manipulating numbers.

- Alignment is needed on communications regarding lost time accidents. The CEO decided to communicate hours since the last lost time accident for CGS-only. That decision was not known or understood to others in the organization.

- Communication on Energy Northwest's safety performance needs to be beyond reproach. Although the safety performance communications to Energy Northwest's stakeholders (e.g., the Public Utility Districts ("PUDs") were accurate, selectively

presenting safety performance data to stakeholders can be misleading and risks management losing credibility.

- Alignment is needed between how the company counts industrial safety accidents for OSHA purposes and how it counts them for compensation purposes. The reason for the different treatment is laudable – to hold the company to a higher standard than is required by law. But the inconsistency creates the potential that an Energy Northwest employee will take exception when the company touts a fantastic safety record while at the same time reducing performance compensation for a safety issue.

B. Factual Findings

1. The Accident Did Not Count Against Energy Northwest

OSHA regulation 29 C.F.R. § 1904.31 identifies the employees whose injuries are recordable to, and therefore must be reported by, a company. Section 1904.31 provides in part:

> You must record on the OSHA 300 Log the recordable injuries and illnesses of all employees on your payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers. You also must record the recordable injuries and illnesses that occur to employees who are not on your payroll if you supervise these employees on a day-to-day basis.

29 C.F.R. § 1904.31(a). The same Section provides that a contractor is responsible for recording any injury or illness of its employees if the contractor provides day-to-day supervision of its employees:

> ***If an employee in my establishment is a contractor's employee, must I record an injury or illness occurring to that employee?*** If the contractor's employee is under the day-to-day supervision of the contractor, the contractor is responsible for recording the injury or illness. If you supervise the contractor employee's work on a day-to-day basis, you must record the injury or illness.

29 C.F.R. § 1904.31(b)(3) (bold and italics in original).

Relevant here, the contract between Energy Northwest and K-5 Contracting for the roofing work explicitly states that K-5 Contracting employees are under the supervision of K-5 Contracting. Section 4.0, Environmental Management System, of the contract states that contractor must "take all reasonable precautions in the performance of work under this Contract to protect the health and safety of employees and members of the public . . . ." Contract section 6.0, Project Monitoring, states that the "Contractor shall provide supervisory oversight at all times . . . ."

Therefore, in accordance with OSHA's regulations and the terms of the contract, K-5 Contracting reported the injury on its OSHA Form 300A for the year 2015 because K-5 Contracting was an independent contractor working at the IDC and providing direct oversight of its employees. The injured employee was under the day-to-day supervision of the independent contractor, not Energy Northwest. Thus, the accident was not recordable to Energy Northwest.

2. Communications on and Calculations of Lost Time Accidents Have Evolved Over Time

Energy Northwest CEO Reddeman sought a means to communicate the company's industrial safety record to its 27 members (22 public utility districts and five municipal utilities) consistent with how other businesses communicate their own safety. He believed that the "universal measure of safety" was to communicate the number of hours worked without a lost time accident. The Industrial Safety department collects data on industrial accidents as part of its Total Industrial Safety Accident Rate ("TISA") performance indicator, which tracks incidents that result in lost time, restricted duty, and job transfers at CGS only. This data is also used in the calculation of the number of hours worked since a lost time accident and is provided to Public Affairs, who assists with the CEO's presentations to Energy Northwest's members.

Based on this data, the initial calculations showed that Energy Northwest reached the milestone of 10 million hours without a lost time accident on November 13, 2013. This milestone was celebrated with communications and T-shirts for employees stating the accomplishment.

In the last quarter of calendar year 2014, the company determined to do a self-review of how it had been categorizing injuries over the previous five years as a result of some questions that had been raised with respect to an injury classification in a worker's compensation claim. As a result of this self-review, the company determined that two injuries from 2012 had to be reclassified, which meant that the company had not met the 10 million hour milestone in November 13, 2013 as initially believed. On March 4, 2015, AR 000323273 was initiated to document this issue and identify corrective actions (including the requirement that Occupational Health notify Industrial Safety as soon as it becomes aware of a workers compensation claim). Public Affairs published an article in EN News on March 5, 2015 explaining that the lost time accident clock had to be reset to 9.5 million hours.

During this time period, CEO Reddeman stated that he also learned that the "clock" on the roadway leading toward CGS counts the number of days worked since a lost time accident only for CGS, and not Energy Northwest as a whole (at the time this investigation was conducted, the investigators noted that the clock read approximately 1250 days worked at CGS without a lost time accident). A Public Affairs Supervisor confirmed that she discussed with the CEO the lost time clock and the fact that it was not agency wide, but applied only to CGS, and that she recommended that future communications on lost time accidents be consistent with the lost-time clock and present CGS-only information.

Mr. Reddeman stated that, because of the initial incorrect calculation of millions of hours worked without a lost time accident, and the fact that the clock outside CGS applied only to CGS, he agreed that he should adjust his communications to Energy Northwest's members to state time worked without a lost time accident only for CGS. Mr. Reddeman provided the investigators with an email dated August 5, 2015 between him and the Public Affairs Supervisor. The e-mail included a draft slide being prepared for an upcoming member PUD presentation. The draft slide states in relevant part:

- Columbia Records:

- ### days without lost-time accident
- 683 days online
- 9.8 (FY14) and 9.5 (CY14) million MWhrs

The email between Mr. Reddeman and the Public Affairs Supervisor confirms that the data presented should be only for CGS and not company-wide. On August 11, 2015 (nearly two weeks before the ladder-fall accident), Mr. Reddeman presented to the Grant PUD. His presentation includes a slide stating that Columbia (and not the Agency as a whole) had achieved a record of 1,056 days without a lost time accident. The assertion in Letter 3 that Mr. Reddeman's September 9, 2015 presentation to Seattle City Light PUD was the first member utility presentation to state lost time accidents for Columbia only, rather than Energy Northwest as a whole, is therefore incorrect.

The allegation in Letter 3 that the CEO did not mention the IDC ladder fall accident in his PUD presentations is correct. At that time, the CEO was conducting visits to the Energy Northwest PUDs to discuss Energy Northwest's performance and member services. The focus of his presentation was on "Joint Action Agency (JAA) Programs and Services Transition," making up roughly 2/3 of his presentation slides discuss the topic. The presentation discussed the results of several benchmarking trips made to other Joint Action Agencies, and Energy Northwest's proposed transition to work more closely with its members and participants in order to reduce costs and improve efficiencies and effectiveness. One slide from this presentation summarized Energy Northwest's "Safe, Reliable, Predictable, and Cost-effective" performance. The October 12, 2015 presentation to the Clallan PUD (for example) provided performance metrics for Columbia, Nine Canyon, and Packwood. The slide included Columbia's performance of "1,118 days without a lost time accident," but did not mention the ladder fall accident at the IDC. As previously discussed, the lost time accident metric was accurate because the ladder-fall accident did not count as a lost time accident against Energy Northwest or Columbia.

In summary, the investigation found that Mr. Reddeman changed his communications on lost time accidents to CGS-only before the contractor ladder fall accident at the IDC on August 24, 2015. Therefore, the investigation does not substantiate the claim that senior plant management changed its communications on lost time accidents from Energy Northwest to only CGS after the ladder fall accident in a deliberate effort to hide the accident.

3. Personnel Debated How to Classify the Accident

Although the accident was not an OSHA recordable or lost time accident against EN under OSHA regulations, and apparently unaware of the CEOs earlier determination to communicate lost time accidents for CGS only, the investigation found that some plant personnel initially debated whether the ladder fall accident should count against Energy Northwest as lost time event, and whether the accident would impact the CEO's communications.

The aforementioned August 25, 2015 email from the Human Performance/Industrial Safety Supervisor to members of senior plant management stated that the K-5 contracting would be responsible for recording the accident on its OSHA 300 log. In addition, the email explained that "several items needed to be reviewed to determine the effect" on the "reporting of hours since

the last Lost Time Injury." Noting that the contractor would "have control of the classification of the injury," and that a Washington State Labor & Industries program allows the contractor to "avoid a Lost Time designation" if the injured employee is provided full pay during recovery, the Human Performance/Industrial Safety Supervisor recommended "that this injury not be counted against our Lost Time indicator until we can fully vet the contractor's L&I sanctioned program and its effect on Lost Time injury reporting."

The Manager of Public Affairs recalled that after the accident, he initially believed that the accident counted as a lost time accident and was not comfortable stating that Energy Northwest had, across the company, worked millions of hours since a lost time accident. Accordingly, as a result of this accident he directed his staff to refer to CGS accomplishments only so that any communications on lost time accidents would be accurate.

The Manager of Regulatory Affairs recalled that the metric of time worked since the last lost time accident is not regularly communicated at the site. Had he been asked after the ladder fall accident, he would have said that just counting CGS hours was accurate, and the company determined that the ladder fall accident did not count against the company. He added that Energy Northwest does not track the number of hours worked by independent contractors at its non-nuclear sites, and therefore it would not make sense to count their accidents against Energy Northwest.

The Human Performance/Industrial Safety Supervisor stated that the company did not change how it counted lost time accidents after the ladder fall accident. Rather, as explained in his August 25 email to senior management, the company had to make a decision on who owned the ladder fall accident at the IDC. The issue was debated at Injury Classification Board meetings. During those meetings, Public Affairs asked what data could be used in the meantime, and the Supervisor responded that CGS-only data was still accurate. Based on a review of OSHA requirements, the Injury Classification Board determined that the accident did not count against Energy Northwest, and it was still accurate to say that Energy Northwest did not have a lost time accident.

The Industrial Safety Program Manager initially believed that the accident was a lost time accident, even though the contractor said it was not a lost time accident. Nevertheless, it was at least an OSHA recordable incident for the contractor. He also explained that he does not prefer using the metric of number of hours worked since the last lost time accident because it is difficult to get accurate numbers for contractor hours worked.

The General Manager of the ES&D Division stated that, in the State of Washington, a contractor does not have to declare lost time for a worker's injury if the contractor keeps the worker on its payroll and gives the worker minimal tasks. The OSHA Form 300 submitted by K-5 Contracting for 2015 identifies the "[t]otal number of days away from work" recorded by its employees, and states that "[t]hese days away from work are not considered Time Loss for days a worker is kept on salary per WA Dept. [of Labor & Industries]."

As indicated by the Human Performance/Industrial Safety Supervisor, the contractor ladder fall accident was reviewed by the Energy Northwest Injury Classification Board. The Injury Classification Board, as its name suggests, reviews industrial accident injuries and determines

whether and how they are recordable. Its members may include the Chief Nuclear Officer, the Vice-President of Operations, the Regulatory Affairs/Performance Improvement Manager, the Human Performance & Industrial Safety Supervisor, the Occupational Health Supervisor, the Industrial Safety Program Manager, the Supervisor of the injured employee, the Manager of the injured employee and the Human Resources Manager.

The investigation included review of the minutes from the Injury Classification Board's October 6, 2015 and November 12, 2015 meetings, which discussed the contractor ladder fall accident at the IDC. The October 6, 2015 meeting minutes state that "the OSHA 300 Log filed would determine whether or not this is an OSHA recordable," and that the initial "[d]etermination recommendation was to classify as a lost time accident." The minutes also provide that the Manager of Public Affairs "expressed concerns," noting that the CEO "speaks routinely about the hours without a lost time injury" and that "the public may not differentiate between Contractors and Employees so this may be perceived in a negative light." In other words, as he explained in his interview, the public views contractors and employees as "all one team" and the communication on the accident must be accurate. The Injury Classification Board would "[s]chedule a follow-up meeting once the OSHA documentation is available." The minutes for the November 12, 2015 Injury Classification Board meeting state that "for the 'Hours Since the Last Lost Time Accident' report, the indicator definition would be changed to include only Energy Northwest employees and Columbia Generating Station contractor employees," which "negates the need to determine if this case was a lost time accident."

4. The Accident Counts Against ES&D At-Risk Compensation

Although Energy Northwest determined, consistent with OSHA requirements, that the ladder fall accident was not recordable incident for the company, the company determined that it would be treated as an Energy Northwest recordable, and thus count against ES&D asset performance and negatively impact ES&D at-risk compensation. Therefore, the investigation does not substantiate the allegation that Energy Northwest personnel attempted to maximize their ARC by not having the accident count as a recordable.

Immediately after the accident, the August 25, 2015 e-mail from the Human Performance/ Industrial Safety Supervisor to senior management explained that the ES&D Industrial Safety Performance indicator "does not specify if contractor personnel are included," and noted that the company had previously determined that it "wanted to align ES&D safety performance tracking to the CGS model, and CGS includes contractor injuries." If the accident were treated as a recordable, it "would place current ES&D performance in the THRESHOLD' At-Risk Compensation category." The investigators reviewed the performance indicators for ES&D and confirmed that they are recording a "hit" to their performance as a result of the IDC ladder fall accident, as predicted in the August 25 e-mail. For example, **Attachment G** is the ES&D ARC Dashboard from December 2015. Therefore, the accident does count against ES&D asset performance and is negatively impacting ARC for those Energy Northwest employees with ES&D responsibilities, including (for examples) the ES&D General Manager and the CEO.[28]

[28] Some executives' have responsibility for both CGS and ES&D. For these employees, the ARC incentive is based 90 percent on CGS performance and 10 percent on ES&D.

The CEO explained the company's decision to have the accident count against it. He stated that, while it was important for the company to determine who was responsible for reporting the accident to OSHA (Energy Northwest or the contractor), a separate and equally important question was how Energy Northwest would record this accident internally. The company determined that the ES&D ARC performance indicators would include injuries to contractors, whether or not they are OSHA recordable. According to the CEO, "we got to the right place here." The CNO stated that the CEO told him we should view it as a "challenge on that side of the house" (meaning ES&D) because "they have a project manager that can swing by to make sure the contractor supervisor is on site," ensuring that work is performed in accordance with requirements. "It doesn't matter if state law says you don't count it."

III. Supervisor Slip and Fall

A. Summary

As previously discussed, the investigation did not substantiate the allegation that CGS failed to share the details of the ladder fall accident at the IDC with the site. Accordingly, the investigation does not substantiate the allegation's suggestion that "failing to let the organization learn from" the ladder fall accident may be partially to blame for the recent slip and fall by a CGS supervisor.

In addition, the investigation found that the supervisor's slip and fall has been communicated with the site, along with lessons learned to prevent it from happening again. The same day of the accident, the supervisor initiated an AR on the incident. The next day, Energy Northwest published an article in EN News reminding personnel to take precautions when walking on ice and snow. In addition, the slip and fall incident was a "thumbs down" subject in a D15 briefing a few days later. The slip and fall was also discussed at the January 2016 monthly department meetings. When the accident was reclassified as an OSHA recordable injury upon new information coming to light, a "yellow sheet" communique on the department clock reset was also distributed to all managers and supervisors for discussion with their departments. In addition, the January 27, 2016 CNO presentation slides to the Energy Northwest Executive Board discussed this incident.

The investigation finds that the actions undertaken by the senior management were reasonable and prudent and has no additional recommendations for action on this concern.

B. Factual Findings

On Wednesday, December 2, 2015, an Electrical Maintenance Supervisor slipped on some snow-covered ice near the circulating water electrical building and twisted his back. The employee used the plowed route until it ended, then determined that the safest route would be through the snow. During his fourth time on this route, he slipped and fell. The individual reported to Occupational Health, initially received only first-aid treatment, and returned to work.

That same day, the supervisor initiated AR 00340720 to document his slip and fall incident. The AR 00340720 states:

> Safety. Fell on ice by CW Electrical building #2

> **** Detailed Description ****
>
> Was walking on the snow on the south side of CW [electrical] bldg 2, slipped and fell. There was a sheet of ice under the snow. Twisted back and reported to Occ health. Was treated at Occ health and returned to work. Safety was notified and they were contacting Fac. to clear snow and sand area were [sic] incident occurred. Filled out IR report 15-030

The next day on December 3, 2015, the site published an article in the EN newsletter entitled "Get a Grip!" to reinforce expectations on precautions to use when walking on ice and snow. Although the article did not discuss the specifics of the supervisor slip and fall from the day before, the article reinforced the plant's expectation that when an employee "anticipate[s] potentially walking in an area that isn't a sanded walk path and the area contains packed snow and ice, [employees are] expected to utilize all available methods to reduce the risk of fall," including the use of over the shoe "gripper" devices that are available in vending machines around the station.

The following Monday, December 7, 2015, the supervisor slip-and-fall incident was the subject of that morning's D15 briefing. The D15 summarized the incident, and identified the "Enabler Missed" as follows:

> Job Planning and Preparation and Worker Practices. Even though the employee evaluated his path through the snow he should have taken the low risk option of not performing the [preventative maintenance] in adverse weather or waiting until that area was cleared of snow and the ice sanded.

This incident was also discussed at the January 2016 Monthly Department Meeting. The Monthly Department Meetings occur on the first Monday of each month, in this case January 4, 2016. Each department is provided the same slide presentation for the meeting. Here, slide 7 of the January 2016 presentation states:

> On Dec. 2, an employee fell and strained his back. The employee was performing a preventative maintenance task in the CW electrical building and slipped and fell on snow covered ice. The individual was evaluated at Occupational Health, given first aid and returned to work. (CR# 340720)

This slip and fall incident was initially not classified as an OSHA recordable event because the supervisor sought only first aid treatment the day of the incident, which is below the threshold of an OSHA recordable event. However, the site subsequently learned that the supervisor also sought off-site medical treatment. This new information was considered at the December 28, 2015 and January 7, 2016 Injury Classification Board meetings. As a result of this new information, the incident was reclassified as an OSHA recordable injury, which resulted in a Department Clock Reset for the Maintenance Department.

Because of the Department Clock Reset, a "yellow sheet" communique detailing the facts and circumstances of the incident, immediate corrective actions, and lessons learned was prepared and distributed to all CGS managers and supervisors on January 26, 2016. The email transmitting the "yellow sheet" states that managers and supervisors are "expected to review and

share learnings with their work groups." The "lessons learned" portion of the yellow sheet states:

> The following questions should be considered prior to performing tasks which are repetitive of those conducted every day
>
> - Do jobsite conditions support safe task performance (special consideration should be given to icy conditions)?
>
> - Is there a safer way to perform this activity?
>
> - If there are obstacles that need to be removed to support a safer way to do the job, do we take the time to report them or use existing processes to have them corrected (i.e., initiate a Condition Report, Work Request, place gravel down on path that will be traveled, etc.)

The investigation included review of the presentation slides for the January 27, 2016, CNO presentation to the Energy Northwest Executive Board. The presentation included discussion of "Department Event-Free Clock Resets," identifying "Maintenance - Individual fell on ice by CW electrical building" as one of the "Contributors."

Allegation 4: The CEO and CNO are rarely on site spending much of their time traveling.

Response to Allegation 4:

A. Summary

Letter 1 claimed that "the CEO and CNO are rarely on site spending much of their time traveling" and that during the last outage, the CNO was in town for only 19 days out of 51 outage days. He took trips to Anchorage, New York City twice, Washington DC, Denver and Florida." The letter also alleged that "similar attendance" was suspected of the CEO." Letter 3 amplifies the anonymous allegers' concerns with the CNO being on travel for a significant portion of the most recent outage.

It is true that both the CEO and CNO travel regularly as part of their responsibilities. This is common for CEOs and CNOs in the nuclear industry, who have responsibilities internal and external to their companies. Indeed, the CNO's increased focus on his external responsibilities was responsive to the Executive Board's direction, although some Board members expressed their dissatisfaction that he would be away from the plant for a substantial portion of the outage. To an outside observer, it may appear that a CEO or CNO who regularly travels would be disengaged. That is not the case here. The investigation did not substantiate the allegation's suggestion that the CEO or CNO are not attentive to their CGS responsibilities while on travel. To the contrary, all of the senior management personnel interviewed stated that the CEO and CNO have always been available by phone and email when on travel. No one cited any example of being unable to reach either the CEO or CNO while they were on travel. While Pillsbury did not substantiate that the CEO or CNO were inattentive to their duties during travel, the CNO should have exercised better judgment with how often he was offsite during the outage. The investigation found that the CNO was on travel for part or all of 29 days of the 51-day outage (three days less than asserted in the allegation). All but three or four of his days on travel were for business reasons. In the nuclear industry, attending industry meetings is expected of CNOs. These meetings provide opportunities for nuclear organizations to share and learn valuable information. Nevertheless, to the outside observer, the fact that the CNO was away from the site for 29 of the 51 days of the outage may raise an understandable question as to whether all this travel was necessary at that time.

Recommendations:

- The Executive Board should confirm its expectations regarding the prioritization of the CEO's and CNO's external and internal responsibilities. While the CNO should continue his efforts to maintain his external connectivity, a prioritization of these responsibilities during the period of an outage (or other times of critical work) should be carefully weighed.

- CGS employees have observed the CEO and CNO take on more external responsibilities as plant performance has improved and trusted senior staff has hired on. These expectations should be shared with the workforce. Additionally, the role of the Vice President of Operations and other senior leaders should be explained.

B. Factual Findings

Senior plant management members were asked if they believed that the CEO and CNO sufficiently carried out their responsibilities when on travel, including the Recovery Manager, Plant General Manager, Regulatory Affairs Manager, Vice President of Operations, and the Vice President of Engineering. All of them stated that that they have been able to reach the CEO and CNO when needed. Representative comments from these individuals included:

- "I don't expect the CEO to be engaged in day to day operations of the plant at all. I expect him to be interfacing with external stakeholders. His job is not to be here micromanaging."

- "I don't think the CNO needs to be present at the station all the time . . . He shouldn't be micromanaging the plant. The VP of OPS and VP of Engineering should be driving the day to day activities."

- "When I came here, [Mr. Sawatzke] was both CNO and VP of Operations," then "he hired a VP of Operations" and it was "natural for him to step back." Since then, "he has become CNO and COO of Energy Northwest, and has more duties outside of Columbia." With a VP of Operations, the CNO "doesn't need to be here to run the day to day operation, even during an outage."

- "Compared to the average CEO, [Mr. Reddeman] is "incredibly engaged in this business." He "comes to all employee meetings, all Management Review Meetings. That probably doesn't happen at other utilities."

- "Every time I called the CNO during an outage, I was able to reach him."

- Energy Northwest "used to hear two criticisms from INPO," but does not anymore: (1) they're isolated in the northwest corner of the country; and (2) their CEO and CNO should be interfacing with the industry."

- "They are more available than any other CEO or CNO I have ever worked for."

- "The CEO has external responsibilities – 27 Public Utility Districts, Board members, etc. It's a big draw on his time."

CEO Reddeman stated that he is always engaged even when he is not onsite. He is "always on the phone or on email, even on vacation or weekends." He added that he has never received any feedback from anyone stating that he is not available." In addition, if he has to go out of the country on travel, such as to attend a World Association of Nuclear Operators meeting, he needs "the permission of the [Energy Northwest] Board Chair," which he has "received each time."

CNO Sawatzke stated that as CNO, he is responsible for the "overall safe, reliable operation of CGS," which he accomplishes by "the team that [he] build[s], the standards [he] set[s], and the example [he] set[s]." It is also his responsibility "to make sure that CGS is an active participant in the nuclear industry" for "active learning" for CGS, and to "provide support for other

stations." When Mr. Sawatzke started at CGS, he was hired to help turn the plant around, and served officially the CNO and unofficially as the acting Vice President of Operations. In those early years, he was not able to attend many external industry meetings because his presence was required at the site. As the plant's performance improved, and as he hired senior staff to oversee the day-to-day plant operations, Mr. Sawatzke was able to attend more external industry meetings. He stated that his CNO responsibilities never leave him no matter where he is located, and that he is "on the phone constantly" with his senior management. During an outage, he is in regular contact with his direct reports, such as the Vice Presidents for Operations and Engineering, and the General Plant Manager. Interviews with Senior Leadership confirm this.

Through Mr. Sawatzke's Executive Assistant, the investigation found that Mr. Sawatzke was on travel for part or all of 29 days during the 51 days of outage in May-June 2015. All but three or four days of his time on travel was spent attending industry meetings, as follows:

- May 12-14, 2015, Washington, D.C. Mr. Sawatzke attended two meetings hosted by the Nuclear Energy Institute ("NEI"), the nuclear industry's trade association: (1) the Nuclear Strategic Issues Advisory Committee ("NSIAC") meeting, where industry CNOs provide strategic guidance to NEI; and (2) the annual Nuclear Energy Assembly, which is the nuclear industry's annual conference attended by industry leaders.

- May 16-25, 2015, Anchorage, AK. Mr. Sawatzke attended the Board of Directors meeting of the Northwest Public Power Association ("NWPPA"). At this meeting, Mr. Sawatzke was installed on the NWPPA Board. In addition, on the tail end of this trip, Mr. Sawatzke flew to Minneapolis to attend his daughter's college graduation.

- June 2-3, 2015, Denver, CO: Mr. Sawatzke attended the NEI Emergency Preparedness Workshop, where he was on a panel with a counterpart from the NRC.

- June 8-13, 2015, Amelia Island, FL. Mr. Sawatzke attended the Utilities Services Alliance (USA) Nuclear Generator & Supplier Executive Summit. USA is a not-for-profit cooperative designed to facilitate collaboration among its member utilities, who own and operate 12 nuclear plants, including CGS. Mr. Sawatzke is the Vice Chair for the USA Board of Directors, and a Board of Directors meeting was held in conjunction with the Summit.

- June 13-17, 2015, New York, NY: Executive Board Treasury Due Diligence. Mr. Sawatzke traveled directly from the USA meeting to New York along with CGS Board Members, the CEO, and the CFO. Mr. Sawatzke stated that the purpose of the meeting was to meet with the bankers who fund Energy Northwest's bonds.

- June 23-24, 2015, Portland, OR: Executive Board meeting. Mr. Sawatzke attended the Energy Northwest Executive Board meeting in Portland, OR. He drove to Portland late Tuesday afternoon, presented to the Executive Board on Wednesday, and drove back the same day.

- June 27-28, 2015, Minneapolis, MN. Personal time.

Mr. Sawatzke's Executive Assistant also stated that, in October of 2015, the USA organization determined to hold their future Board of Directors meetings in July so as not to conflict with CGS and other plants' springtime outages. CGS's outages are typically scheduled to begin in May and end in June.

As it relates to Mr. Reddemann, given the nature of his responsibilities, many of which are externally focused, the fact that he may be away from the CGS site for extended periods of time during a nuclear outage is not unexpected and is consistent with the practice of his peers in the nuclear industry.

In the case of Mr. Sawatzke, while the investigation found that he was consistently connected to the site during the outage, appeared to be fully informed about the status of activities at the site, and made himself available at all times, to the outside observer, the fact that he was away from the site for 29 of the 51 days of the outage may raise a understandable question as to whether all this travel was necessary at that time. As Mr. Sawatzke built up his senior staff and plant performance improved, he appropriately decided, with the approval of the Energy Northwest Board, to increase his focus on his external responsibilities. As part of this change in Mr. Sawatzke's role, the VP of Operations was given the responsibility for general management and oversight of the outage, which had previously been handled by the CNO. However, this change in roles may not have been fully apparent to the workforce at the site, so some individuals may have been left with the impression that Mr. Sawatzke was not attending to his duties when in fact he was well connected and had assigned a designated individual to lead the outage effort. Mr. Sawatzke should have exercised better judgment with how often he was offsite during the outage.

<u>Allegation 5</u>: **The CEO calendar was blocked at the time of Letter 1 and the CNO has since blocked access to his calendar**.

<u>Response to Allegation 5</u>.

A. Summary

This allegation[29] is substantiated in part. Employees can view the CEO's Microsoft Outlook calendar. In other words, individuals can open his calendar and see when he has an appointment and when he does not. The details of each appointment on the CEO's Outlook calendar are not available for all employees to view. For the CNO's Outlook calendar, these details had been accessible prior to the receipt of Letter 1. Following receipt of Letter 1, the CNO set his calendar access permissions to match those of the CEO. For a variety of human resource, management and security reasons, placing careful limits on who has access to the specific details of the CEO's and CNO's calendars is considered a standard practice in the nuclear industry. The investigators confirmed that this is the case at other peer nuclear utilities.

No actions are recommended, other than to share the results of the independent investigation with employees.

B. Factual Findings

The investigation team confirmed that access to the CEO's outlook calendar is limited. In general, CGS employees can open his calendar in Outlook and view when time is blocked out for appointments and when he is available for an appointment. The details of an appointment (such as its location, the subject of the appointment, or other participants) are not available for viewing by all employees. Some members of the senior leadership team are able to view these details for each appointment on his calendar. This level of access is consistent with what would be expected for a nuclear utility CEO given the sensitive nature of the human resource, management and security concerns for which he is responsible. The investigators confirmed that this is the case at other peer nuclear utilities.

The investigation found that following receipt of Letter 1, the CNO discussed access to his calendar with the CEO and changed his calendar access permissions to match those of the CEO. Given the nature of his responsibilities, the investigators believe this change was a prudent and appropriate measure.

Senior and mid-level Employees interviewed as part of this investigation reported that the status of the CEO's and CNO's calendars did not impede their ability to accomplish their jobs. All interviewed stated that they generally had no need to view their calendars other than to schedule a meeting with them. They might view the CEO or CNO calendar to get an idea when either might be available for a meeting. Employees reported that they typically called the CEO's or CNO's respective Executive Assistant to schedule a meeting.

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[29] Letter 3 does not add any new information to the allegations contained in Letters 1 and 2, other than to disagree with Pillsbury's findings as summarized at the all employee meetings.

Allegation 6: **The Board should ask the company about the NRC Investigation into security incidents that led to a fine and settlement**.

Response to Allegation 6:

Letter 1 identified two incidents involving CGS Security Officers and suggested that the Board may not know about these incidents. One incident is alleged to have involved "willful inattentiveness by nuclear security officers. Security officers where [sic] taking nude photos while on duty at security posts." The other incident was "a security officer was found to be involved in a geocaching game while on duty where gamers are invited to attempt to enter the CGS owner controlled area via an online game app." This independent investigation sought to determine whether CGS responded appropriately at the time these security issues were discovered (i.e., did CGS fully investigate and understand the facts, and were corrective actions timely and comprehensive). The investigation also looked at whether senior plant management acted transparently in addressing these events. The investigation into the security allegations included interviews with the Assistant General Counsel & Manager of Legal Services, the Manager of Employee and Labor Relations, the Security Operations Supervisor, and senior plant management personnel with oversight of the Security Department. The investigation also included review of the Human Resources investigation files on both events, and the internal investigation report on the Geocaching incident.[30]

I. Inattentive Security Officers

A. Summary

Energy Northwest responded appropriately and promptly in responding to the allegations concerning inattentive security officers. The company immediately began investigating the allegations as soon as it received them, and took appropriate action based on the information it had available to it, including placing two officers on administrative leave, with one ultimately resigning and the other being terminated. CGS agreed to mediation with the NRC to resolve the apparent regulatory violations that resulted from this incident, and that mediation resulted in a confirmatory order requiring CGS to implement multiple corrective actions and a to pay a civil penalty. The corrective actions are either complete or in progress, and the civil penalty has been paid.

Senior plant management has been transparent in its response to this issue, including by briefing the Executive Board on this matter. We note, however, that the Executive Board may want to consider whether it should have been briefed on this incident sooner, such as (for example) upon the company's receipt of the NRC's preliminary finding of a regulatory violations, rather than after the mediation that resolved the violations. Senior plant management has also been transparent by capturing multiple corrective actions resulting from this issue in the CGS

[30] Letter 3 states that the anonymous allegers "initially agreed with the investigation findings" that were presented to employees at the all hands meetings. However, Letter 3 states that the allegers believe a recent "organizational change" in the Security Department "defies logic," and that a "chilled environment" is "waiting to happen" in Security. Energy Northwest assessed the work environment in the Security Department in December 2015 and is currently addressing work environment issues in the Department.

corrective action system, several of which require the participation of the entire security officer workforce.

The investigation finds that the actions undertaken by the senior plant management were reasonable and prudent and has no additional recommendations for action on this concern.

B. Factual Findings

On November 25, 2013, an anonymous caller reached the Assistant General Counsel and told her that a male and female security officer were engaging in inappropriate conduct in the "blast and impact resistant enclosures" or "BREs" at the Columbia site. The individual provided the first and last name of the female officer, the first name of the male officer, and identified their security squad. No other information was provided. The Legal and Human Resources Departments immediately commenced an internal investigation. The two individuals at the center of the allegations were interviewed immediately upon their return to the site. While the internal investigation confirmed that the two individuals were friends outside of work, it could not substantiate that any inappropriate behavior had occurred on site. Accordingly, the investigation was closed.

The NRC Office of Investigations ("OI") began looking into similar allegations in February 2014. OI also could not substantiate that any inappropriate conduct had occurred on site and closed its investigation that same month.

Four months later in June 2014, CGS security lieutenants received an anonymous phone call. The individual requested contact information for the NRC in order to provide the NRC with evidence concerning an ongoing investigation of inappropriate conduct. This information was referred to NRC OI. OI subsequently returned to the site on August 12, 2014 to conduct additional interviews of Security personnel. OI briefed Energy Northwest on its initial findings on August 14, 2014. Based on these initial findings, Energy Northwest placed the male security officer on administrative leave the same day. The male officer subsequently resigned on October 3, 2014.

OI conducted additional interviews on October 7-9, 2014. Based on the initial findings from these interviews provided by OI, Energy Northwest placed the female officer on paid administrative leave pending the results of the OI investigation. OI continued its investigation, including a site visit in January 2015 and additional interviews on February 4, 2015. Based on information provided by OI and other information obtained outside the OI investigation, Energy Northwest terminated the female officer's employment on February 9, 2015 (she had been on paid leave for four months).

On June 25, 2015, Energy Northwest received a Notice of Apparent Violation from the NRC for apparent violations of NRC's security requirements stemming from this matter, and chose to pursue mediation to resolve it. A successful alternative dispute resolution mediation session was held on August 6, 2015, and a preliminary settlement was reached on August 25, 2015. On September 28, 2015, the NRC issued to Energy Northwest a Confirmatory Order confirming the commitments Energy Northwest made in the mediation to address the concerns raised by the apparent violation. Energy Northwest also paid a $35,000 civil penalty.

Many of the Energy Northwest commitments have been completed; the remaining commitments were in the process of being completed at the time this investigation was conducted in February 2016. All of these commitments and associated actions are being tracked in the CGS corrective action system. In brief summary, the commitments and corresponding Action Requests are as follows:

- Conduct a Common Cause Evaluation of the events, with the results incorporated into the CGS corrective action program, AR 337560 (Mostly complete; some sub-actions in progress)

- Install wide-angle cameras in BRE's to monitor the availability of the security officers, AR 337564 (In progress)

- Revise the CGS annual compliance and ethics computer based training (to be reviewed by the NRC prior to implementation) to address deliberate misconduct requirements, compliance therewith, and penalties for non-compliance, AR 337767 (Revision complete; training to be administered)

- Reinforce with security officers the need to comply with regulations, and the penalties for non-compliance, with a "read-and-sign" statement. This includes the requirement under 10 C.F.R. § 73.55(k)(1) that the security force be trained, qualified, and equipped "at all times" to interdict and neutralize threats, AR 337773 (In progress)

- Prepare a "lessons learned" presentation (to be reviewed by the NRC) and provide it to CGS security personnel. Among other things, the presentation reviewed the facts and circumstances of the "deliberately inattentive" security officers in the current incident as well as prior incidents involving inattentive security officers. One of the objectives of the presentation is to "[u]nderstand corrective actions necessary to prevent future inattentiveness issues." AR 337776 (Complete)

- Revise CGS procedures as appropriate based on lessons learned, AR 337780 (In progress)

- Prepare a presentation on the basis for the violation and deliver it to an appropriate industry forum (e.g., Nuclear Energy Institute Nuclear Security Working Group), AR 338127 (In progress)

- Conduct a targeted nuclear safety culture assessment of the CGS security organization, and incorporate any recommended actions into the corrective action program as appropriate, AR 338133 (Complete)

- Revise CGS investigatory procedures to incorporate lessons learned from this matter, AR 338134 (Complete)

The Energy Northwest CEO and CNO briefed the Executive Board on this matter during its August 26-27, 2015 meetings (two weeks after the mediation session with the NRC, and a month

before the confirmatory order was issued). Based on a review of the CEO's talking points for this Board presentation, the CEO provided the following information to the Executive Board:

- "[M]isconduct by two of our nuclear security officers which will unfortunately land us with a $35,000 penalty from the Nuclear Regulatory Commission."

- "In short, these two security officers – once male and one female – decided to share selfies with each other while manning one of those security towers you've seen surrounding Columbia Generating Station, known as blast and impact resistant enclosures, or BREs for short."

- "Needless to say, the individuals involved are no longer working for Energy Northwest. We also have a plan going forward, among other remediating measures, to engage our nuclear security force on the topics of professional behavior, standards, and expectations. And we have initiated a new project to install cameras in our BREs."

The CNO presentation slides for the same meeting indicate that the CNO briefed the Executive Board on the "Alternative Dispute Resolution" that resulted from a "Security violation."

Subsequently on January 5, 2015, the Energy Northwest Public Relations Department notified the Executive Board by e-mail that the Tri-City Herald would publish a report in the January 6 or 7, 2015 edition on the security officers' misconduct. The e-mail reminds the Executive Board that the CEO had briefed them on the issue back in August. It also states that Public Relations had notified the Tri-City Herald at that same time, but the newspaper "wasn't interested in the issue." The email also transmits to the Executive Board a December 28, 2015 letter from Energy Northwest to the NRC updating the NRC on its commitment implementation status. On January 6, 2015, Public Relations followed up with an email to the Executive Board transmitting the online article on the security incident that appeared that day.

In addition: (1) the Confirmatory Order is a public document available on the NRC website; (2) all of the commitments Energy Northwest agreed to implement are available for review in the corrective action system; and (3) several of these commitments (read-and-sign statements, safety culture assessment, lessons learned presentation) require the participation of the security officer workforce.

II. Geocaching Security Incident

A. Summary

Energy Northwest acted reasonably, appropriately, and in a timely manner responding to the "geocaching" security incident allegations. The company immediately began investigating the security incident as soon as it happened, and took appropriate action based on its internal investigation, including suspending the unescorted access authorization of two employees, placing them on paid administrative leave, and ultimately terminating their employment. CGS implemented multiple corrective actions, all of which are complete.

Senior plant management has been transparent with plant employees on this issue. This incident is documented in the corrective action system, including a detailed Condition Evaluation. It was the subject of a site wide broadcast reminding employees that geocaching is strictly prohibited. Revised ethics and compliance training, which is to be rolled out starting in March 2016, includes a scenario based on the geocaching incident. The company also communicated information on this event to external audiences, including the NRC and two nuclear industry groups. Senior plant management did not brief the Executive Board on this issue at the time because they did not believe that it rose to the level of information appropriate for the Board. Some members of the Board expressed a view that they believe they should have been briefed regarding this incident. Given the nature of the incident and the potential to raise media and public interest, the failure to fully and currently inform the Board of this incident was an error.

Recommendation:

- The Executive Board should confirm its expectations regarding the type of information/incidents and timing of issues that should be communicated to the Board.

B. Factual Findings

On August 9, 2015, a CGS security patrol officer encountered a CGS I&C Technician and observed him to be walking erratically (back and forth) near the plant engineering center parking area. Later that same day two individuals were found trespassing in the CGS Security Defined Owner Controlled Area ("SDOCA") by security officers on patrol. The next day, on August 10, 2015, the Security Department commenced an internal investigation, which ultimately found that the individuals in both incidents (the I&C Technician and the two members of the public) were playing a virtual reality game called "Ingress." Through its investigation, the Security Department learned that the I&C Technician had posted five GPS locations (also known as virtual "portals") inside the CGS owner controlled area, and played the game while on duty. As part of the game, the individuals caught trespassing were attempting to access and claim the portals. In order to do so, the individuals needed to be within approximately twenty feet of the location of a portal.

The Security Department investigation also found that another individual, a Security Officer, also played Ingress, was aware of the portals, had previously accessed them himself, and had been in contact with the I&C Technician regarding the game.

The Security Department's internal investigation found that the I&C Technician and the Security Officer were not trustworthy and reliable because (1) the I&C Technician brought risk to the plant by introducing the portals to the site; and (2) the Security Officer failed to report the existence of the portals on site, and that he and another individual were playing the game while on duty. Accordingly, the unescorted access authorizations of both individuals were terminated on September 3, 2015, and they were placed on paid administrative leave at that time. Human Resources subsequently interviewed the individuals at the end of September 2015. On October 22, 2015, CGS terminated the employment of both individuals based on the facts and circumstances of the events and the failure of the individuals to maintain unescorted access privileges.

The geocaching security violation is captured in the CGS corrective action system at AR 334541. The accompanying Condition Evaluation summarizes the geocaching events, including the attempt by two non-employees to access the portals, the fact that the portals were placed inside the SDOCA by a company employee, and that two employees had accessed the portals. The Condition Evaluation also identifies corrective actions, all of which are complete:

- Continue to monitor the portals and remain vigilant against additional unauthorized access attempts.

- Deactivate and remove the portals from the SDOCA. The site worked with the Federal Bureau of Investigation and has had them removed.

- Communicate to all site employees that geocaching is not authorized on site and how to report any knowledge of geocaching on company property. This communication occurred on September 24/25, 2015.

- Communicate to the Nuclear Energy Institute the details of this event for use as industry operating experience.

In addition, the Security Operations Supervisor stated that communications were made to the NRC (both Region IV and Headquarters) and the industry group Utilities Services Alliance, of which CGS is a member (through these external communications, CGS learned that other sites have dealt with similar issues). The Security Force was also briefed on these events, and reminded that Security personnel should know that geocaching games are prohibited on site. CGS also reinforced with Security personnel the site's requirements governing cell phone usage while on duty.

The site-wide communication on geocaching was linked from the EN weekly newsletter the week of September 24, 2015. The "Broadcast Message" dated September 25, 2015 states that "Involvement in geocaching type games of any form inside the Exclusion Area and [SDOCA] is prohibited. These games present significant risks and challenges to safety and the security of our station." It goes on to describe a geocaching game and states that in August of 2015, two unauthorized individuals attempted to gain access to the SDOCA to reach a virtual portal.

As previously discussed, the company has revised its annual compliance and ethics computer based training to address deliberate misconduct requirements as a result of the inattentive security guard events. One revision included adding a question and answer based on the geocaching incident, and reinforces the prohibition on such gaming and the responsibility of employees to report to management any information on such gaming occurring on site. This revised training is to be rolled out beginning in March 2016.

The CEO stated that the Executive Board was not specifically briefed on this incident because he believed it did not rise to the level of information appropriate for a Board briefing. Some members of the Board expressed the view that they should have been informed regarding the incident.

Letter 4 Allegations: (1) Prior to the March 2016 briefing by Pillsbury to the Executive Board on Pillsbury's preliminary investigation findings, the CNO received a draft copy of Pillsbury's investigation report before it was sent to the majority of Board members; and (2) Over the last three weeks, the CNO has made threats against the anonymous allegers: (a) he will use the Information Technology ("IT") department to find the letter writers; (b) he will sue the anonymous letter writers for libel for hurting his reputation; and (c) he will have the anonymous letter writers arrested for releasing private documents and misusing the IT systems.

Response to Letter 4 Allegations:

The claim that the CNO received an advance copy of a draft Pillsbury investigation report in March 2015 before it was distributed to the majority of Executive Board members is not substantiated. No draft investigation report existed in March 2016. Pillsbury made available a draft investigation report the Executive Board Ad Hoc Subcommittee members on Wednesday May 18, 2016, and subsequently to the remainder of the Executive Board members on Friday May 20, 2016. Pillsbury did not make a draft investigation report available to anyone outside of the investigation team prior to this time.

The letter states that over the last three weeks "we have heard" that the CNO has made "threats" against the anonymous letter writers, although there was no information provided that the allegers had suffered any retaliatory activity. To address the concerns raised in this letter, Pillsbury conducted two interviews with the CNO. During these interviews, the CNO indicated that during a meeting of the executive team, he admitted that he had expressed concerns regarding the access that the anonymous letter writers had to internal emails, including some which he had personally authored. While he did not suggest that any specific action be undertaken on his concern, he recollected that the General Counsel had made it clear to the group that attempts to identify the individuals would be inappropriate. When questioned whether he instructed anyone, including IT, to identify the letter writers, he emphatically denied this allegation. While the CNO indicated that he was concerned about the allegations as well as protecting his reputation, he stated that he has made no threats to sue the anonymous letter writers, nor has he threatened to have the allegers arrested regarding the release of company records and misusing the IT system.

Pillsbury has received no further information to substantiate the allegation. Given the tenuous nature of the allegation ("we have heard") made in the fourth letter and the CNO's strong rejection of this allegation, Pillsbury does not recommend any further investigation of these concerns.

No actions are recommended, other than to share the results of the independent investigation with employees.

CGS Business Plan Performance Reports

March 2015

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16			
Site Performance	89.04	88.99	88.91	88.17	87.88	87.86													LE	80.4	RED
Forecast	92.17	92.17	92.17	92.17	92.17	92.17	92.17	92.17	92.17	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	LE	91.1	YELLOW
Station Goal	96.27	96.27	96.27	96.27	96.27	96.27	96.27	96.27	96.27	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	LE	96.2	WHITE

June 2015

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16			
Site Performance	88.17	87.88	87.86	88.32	86.75	84.21													LE	80.4	RED
Forecast	92.17	92.17	92.17	92.17	92.17	92.17	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	LE	91.1	YELLOW
Station Goal	96.27	96.27	96.27	96.27	96.27	96.27	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	LE	96.2	WHITE

July 2015

	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16			
Site Performance	87.88	87.86	88.32	86.75	84.21	81.01													LE	80.4	RED
Forecast	92.17	92.17	92.17	92.17	92.17	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	LE	91.1	YELLOW
Station Goal	96.27	96.27	96.27	96.27	96.27	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	LE	96.2	WHITE

August 2015

	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16			
Site Performance	87.86	88.32	86.75	84.21	81.01	81.16													LE	85	RED
Forecast	92.17	92.17	92.17	92.17	81.10	81.19	81.22	81.32	81.70	81.79	81.84	82.04	82.05	82.03	82.02	81.97	82.02	82.02	LE	92.9	YELLOW
Station Goal	96.27	96.27	96.27	96.27	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	LE	96.4	WHITE

September 2015

	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16			
Site Performance	88.32	86.75	84.21	81.01	81.16	81.22													LE	85	RED
Forecast	92.17	92.17	92.17	81.10	81.19	81.22	81.32	81.70	81.79	81.84	82.04	82.05	82.03	82.02	81.97	87.29	92.63	93.32	LE	92.9	YELLOW
Station Goal	96.27	96.27	96.27	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	LE	96.4	WHITE

October 2015

	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16			
Site Performance	86.75	84.21	81.01	81.16	81.22	82.10													LE	85	RED
Forecast	92.17	92.17	81.10	81.19	81.22	81.32	81.70	81.79	81.84	82.04	82.05	82.03	82.02	81.97	87.29	92.63	93.32	93.32	LE	92.9	YELLOW
Station Goal	96.27	96.27	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	LE	96.4	WHITE

November 2015

	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16			
Site Performance	84.21	81.01	81.16	81.22	82.10	77.29													LE	85	RED
Forecast	92.17	81.10	81.19	81.22	81.32	81.70	77.30	77.20	77.30	77.16	77.01	77.88	76.76	76.65	80.19	85.28	85.26	85.14	LE	92.9	YELLOW
Station Goal	96.27	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	LE	96.4	WHITE

December 2015

Value(s) by Period	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
Rank	11	12	12	11	14	12												
Forecast	92.2	90.5	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.0	93.0	93.0	77.3	85.9
Index	82.2	82.3	82.3	82.5	78.4	78.3												

CNO Executive Board Reports

August 2015

	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16			
Site Performance	87.88	87.86	88.32	86.75	84.21	81.02													LE	80.4	RED
Forecast	92.17	92.17	92.17	92.17	92.17	81.10	81.19	81.22	81.32	81.70	81.79	81.84	82.04	82.05	82.03	82.02	81.97	82.02	LE	91.1	YELLOW
Station Goal	96.27	96.27	96.27	96.27	96.27	85.00	85.10	85.10	85.10	85.10	85.10	85.10	85.10	85.10	85.10	85.10	85.10	85.10	LE	96.2	WHITE

September 2015

	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-15			
Site Performance	87.86	88.32	86.75	84.21	81.01	81.16													LE	80.4	RED
Forecast	92.17	92.17	92.17	92.17	81.10	81.19	81.22	81.32	81.70	81.79	81.84	82.04	82.05	82.03	82.02	81.97	82.02	82.02	LE	91.1	YELLOW
Station Goal	96.27	96.27	96.27	96.27	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	LE	96.2	WHITE

October 2015

	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16			
Site Performance	88.32	86.75	84.21	81.01	81.16	81.22													LE	80.4	RED
Forecast	92.17	92.17	92.17	81.10	81.19	81.22	81.32	81.70	81.79	81.84	82.04	82.05	82.03	82.02	81.97	87.29	92.63	93.32	LE	91.1	YELLOW
Station Goal	96.27	96.27	96.27	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	LE	96.2	WHITE

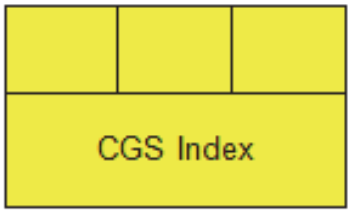
December 2015

	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16			
Site Performance	84.21	81.01	81.16	81.22	82.10	77.29													LE	85	RED
Forecast	92.17	81.10	81.19	81.22	81.32	81.70	77.30	77.20	77.30	77.16	77.01	77.88	78.78	78.65	80.19	85.28	85.26	85.14	LE	92.9	YELLOW
Station Goal	96.27	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50	LE	96.4	WHITE

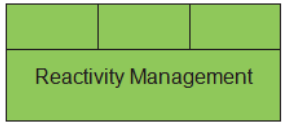
January 2016

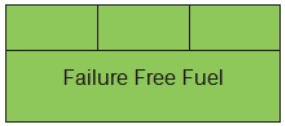
Value(s) by Period	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
Rank	11	12	12	11	14	12												
Forecast	92.2	90.5	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.0	93.0	93.0	77.3	85.9
Index	82.2	82.3	82.3	82.5	78.4	78.3												

ENERGY NORTHWEST

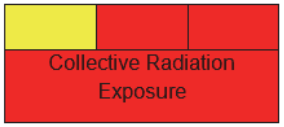


Nuclear

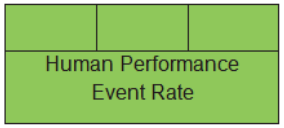


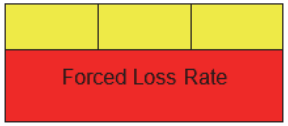


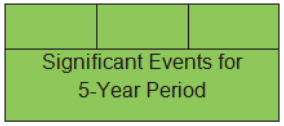
Radiological

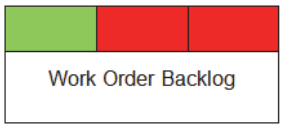


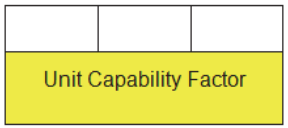
Reliability

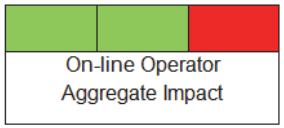




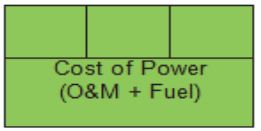


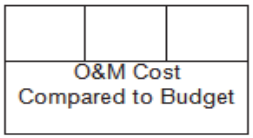


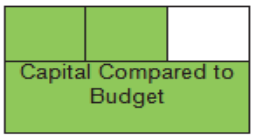




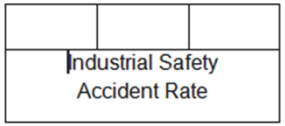
Cost

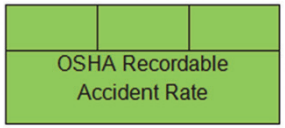




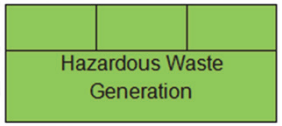


Industrial





Environmental



ENERGY NORTHWEST

Overall CGS Performance

Green = 1st quartile White = 2nd quartile Yellow = 3rd quartile Red = 4th quartile

Nuclear

- Reactivity Management
- Station Risk Management

Radiological

- Collective Radiation Exposure
- On-line Radiation Exposure

Reliability

- Columbia Performance Index
- Unit Capability Factor
- Industry Forced Loss Rate
- Industry Forced Loss Events
- R23 Pre-Outage Milestone Status
- Equipment Reliability Index - ERI
- On-line Operator Aggregate Impact
- Site Material Condition
- Human Performance Event Rate
- Department Event Free Clock Resets

Cost

- O&M Cost
- Capital Cost

Industrial

- Total Industrial Safety Accident Rate
- OSHA Recordable Accident Rate

Environmental

- Hazardous Waste Generation

Sep	Oct	Nov
December		

Phases of **EXCELLENCE**

Phase I – Improving Behaviors

Phase II – Demonstrating Results

Phase III – Achieving Excellence

Phase IV – Sustaining Excellence

- Increased Accountability and Coaching
- Improved Compliance to the Corrective Action Program (CAP)
- Improved Risk Management and Decision Making
- Demonstrated Discipline to the Work Management Process

- Reduced CAP Backlogs
- Improved Equipment Reliability Index (ERI) Performance
- Reduced Maintenance Backlogs
- All Outage Preparation Milestones Met
- Improved Risk Management and Decision Making

- Supervisor Led
- Predictable Performance
- Successful Outage

- Predictable Long-range Planning and Execution
- Risk Management is Core Business
- Strong Governance and Oversight
- Cost-effective Operation

Phases of **EXCELLENCE**

ATTACHMENT G

Energy Services and Development (ES&D) Asset Performance

FY16 Goals

	Oct	Nov	Dec	
Industrial Safety *Stretch = Zero recordable and ≤2 offsite medical treatments* *Target = Zero Recordable* *Threshold = ≤1 Recordable*	1	1	1	FYTD
	1	1	1	LRE
Violation/Fines *Stretch = Zero from any federal, state or county agency* *Target = Zero from any Environmental Agency* *Threshold = One from any Environmental Agency*	0	0	0	FYTD
	0	0	0	LRE
Initiative Success (ES&D) *Stretch= ≥12 pts.* *Target = 8 pts.* *Threshold = 4 pts.*	2	3	4	FYTD
	12	12	12	LRE
*Budget Performance/ BDF Cash Margin** *Stretch= $541k or $965k* *Target = $401k or $715k* *Threshold = $261k or $465k*	$469K	$628K	$792K	FYTD
	$993K	$861K	$544K	LRE
BDF Revenue Generating Profit Margin *Stretch= $750k* *Target = $469k* *Threshold = $150k*	$308K	$401K	$483K	FYTD
	$538K	$534K	$556K	LRE

Industry Performance

No Industry Performance Data Available

FY16 Goals Status

Green	Earning 10% Above At-Risk Compensation Target
White	Earning 90-110% of At-Risk Compensation Target
Yellow	Earning Between Threshold and 90% of At-Risk Compensation Target
Red	Below At-Risk Compensation Threshold

Industry Performance Status

Green	1st Quartile
White	2nd Quartile
Yellow	3rd Quartile
Red	4th Quartile

FYTD = Status color based FY performance to date.
LRE = Status color based on the end of FY16 latest revised estimate (LRE).
*= Cash margin alternate figures apply if Demand Response project is extended