DESCRIPTION OF CHANGES

Justification (required for major revision)
EMS-01 has been updated to incorporated changes to ISO 14001:2015. Changes included align to the new format of ISO 14001:2015 and incorporating new requirements such as the Context of the Organization.

Page(s)	Description (including summary, reason, initiating document, if applicable)
All	Minor grammar changes. Minor update to text throughout document to add clarity.
5-6	Section 5.0 – Minor updated to the scope of the EMS.
11-14	Section 9.1 – updated the context of the organization.
19	Added reference to EP-01, Emergency Plan Columbia Generating Station
49	Section 11.1 – added statement on EMS budget authority.
43,58-59,60	Removed SWP-ENV-03 and replaced it with GBP-ENV-17.
33-35,43, 57	Removed SWP-ENV-02 and replaced it with GBP-ENV-18.
58	Minor Rev. 001. Updated Solid Waste Disposal section to remove coordinates for the IDC and CGS inert landfill. Added E&RP as an Certified Landfill Operator for CGS inert landfill.
18	Minor Rev. 002 – Added References to GBO-EPP-02 Environmental Emergency Preparedness.
35	Minor Rev. 002 – Added References to the following procedures: SWP-EPP-01 Emergency Response Organization and Training, PPM 1.3.10 Plant Fire Protection Program Implementation, and EPI-21 “Drill and Exercise Development and Implementation.
45-46	Minor Rev. 002 – Added the following procedures to Section 10.0: SWP-EPP-01 Emergency Response Organization and Training, PPM 1.3.10 Plant Fire Protection Program Implementation, and EPI-21 “Drill and Exercise Development and Implementation.

TABLE OF CONTENTS

1.0 PURPOSE

The purpose of this program description (also referred to as the EMS Manual) is to provide a "roadmap" or guide to the Energy Northwest Environmental Management System (EMS), by describing the main elements of the EMS and their interaction, and cross-referencing related documentation.

2.0 DESIGN OF THE EMS

An EMS is a tool to systematically identify, manage, control, and monitor environmental impacts. The EMS is designed to promote environmental stewardship and help improve environmental performance, provide for compliance with the law, improve efficiency and effectiveness, reduce costs, and earn and retain regulator and community trust.

The EMS conforms to the requirements of ISO 14001:2015 and other voluntary commitments identified in this manual. This manual discusses each requirement of the standard and how the EMS conforms to those requirements. See Section 9.0, EMS Elements, for details of each ISO 14001:2015 clause and a description of how Energy Northwest satisfies each requirement.

3.0 COMPANY PROFILE

Energy Northwest is an energy services provider headquartered in Richland, Washington. It is a municipal corporation and Joint Action Agency of the State of Washington, organized in 1957, and is comprised of member utilities from across the state of Washington.

Energy Northwest is empowered to finance, acquire, construct, and operate facilities for the generation and transmission of electric power. Energy Northwest owns and operates four electricity generating stations: Columbia (nuclear power plant), Packwood Lake Hydroelectric Project, Nine Canyon Wind Project, and White Bluffs Solar Station. All electrical energy produced by Energy Northwest business units is ultimately delivered to electrical distribution facilities owned and operated by the Bonneville Power Administration (BPA) as part of the Federal Columbia River Power System.

4.0 ORGANIZATION

Energy Northwest's Executive Board sets the policies that govern the operations of the organization. It is made up of 11 members, five elected from the Board of Directors, three outside members appointed by the Board of Directors, and three outside members appointed by the Washington state Governor.

Energy Northwest's Board of Directors consists of representatives of member utilities including public utility districts and municipal utilities. The Board of Directors has the authority to authorize new projects and terminate existing ones. It elects members from its own membership and appoints outside directors to the Executive Board.

Management of all operational activities of Energy Northwest is the responsibility of the Chief Executive Officer (CEO). A Chief Operating Officer (COO)/Chief Nuclear Officer (CNO), and a

team of three vice-presidents, a general manager, and the General Counsel, each with various organizational responsibilities, support the CEO. The corporate organizational chart is provided electronically in SharePoint (theCurrent).

Energy Northwest typically employs approximately 1,200 employees and 60 - 100 contractors working primarily at the seven different locations listed in Section 6.0. During biennial maintenance and refueling outages at Columbia, approximately 1500 additional temporary contract workers are hired.

Environmental organization and staffing, and roles and responsibilities are described in Attachments 11.1 and 11.2.

5.0 SCOPE OF THE EMS

The EMS is corporate in scope and applies company-wide to all activities as defined in this EMS Manual. This includes Columbia Generating Station (Columbia), also referred to as the "plant", and other power producing facilities, with the following exceptions:

- **Terminated Projects:** The EMS does not apply to terminated projects that are no longer owned by Energy Northwest.

- **Other Initiatives or Business Ventures:** Application of the EMS to other initiatives or business ventures is limited to activities owned or led by Energy Northwest (Energy Northwest is not contracted). See discussions under each activity listed in the applicable section of this manual.

- **Work performed off-site (on property not owned or leased by Energy Northwest) or performed as a contractor:** If Energy Northwest staff are contracted to perform work at a facility that belongs to another party, in accordance with that client's policies, programs and procedures, the EMS as a system does not apply. However, during work planning, Energy Northwest's activities may be evaluated to determine whether they are consistent with Energy Northwest policies and practices before accepting the work. An exception would be if someone hired Energy Northwest and specified in the contract that the EMS programs and practices be applied to the work.

A review of Energy Northwest projects, products, and services identify activities which are documented during the annual aspect review. Activities includes maintenance, design, project planning/design, and operation of facilities, decommissioning, and leaving" (i.e., terminating activities at) a site. Facilities where Energy Northwest conducts its activities are described under the Facilities section.

The scope of the EMS includes the following facilities and locations: Columbia, Nine Canyon Wind Project, Packwood Lake Hydroelectric Project, White Bluffs Solar Station, Industrial Development Complex (IDC), Applied Process Engineering Laboratory (APEL), and the Energy Northwest Office Complex (ENOC). New projects will be included within the scope of registration once they are operational and have been subject to an internal EMS audit and management review. The activities at these facilities are undertaken in compliance with

Energy Northwest's obligations, both legal and those adopted by the organization as requirements, including those addressing the needs and expectations of interested parties. Compliance obligations are discussed in Section 9.7 of this document.

6.0 FACILITIES

The EMS is limited to those facilities and operations managed and operated by Energy Northwest. The EMS is applicable to the following existing facilities:

- Columbia
- IDC
- APEL
- ENOC
- Nine Canyon Wind Project
- Packwood Lake Hydroelectric Project
- White Bluffs Solar Station

Facility	Approx Acres Occupied	Buildings and Trailers	Approx Building Sq. Ft.	Approx Employees at Facility
Columbia and Support Facilities	300	70	585,000(2)	1200
Nine Canyon	75	3	12,750	11
White Bluffs	1	0	N/A	0
Packwood	530(1)	7	20,000	2
APEL	6	2	90,000	11
IDC (Projects 1 and 4)	970	40	330,000(3)	7
ENOC	17	3	175,000	45
				∑ = 1276

(1) Energy Northwest owns approximately 30 acres

(2) Does not include Columbia power block

(3) Does not include IDC Project 1 power block

6.1 Power Producing Facilities

6.1.1 Energy Northwest's primary "business unit" is Columbia, a 1,150-megawatt net boiling water nuclear plant completed in 1984. The Columbia site is located north of Richland, Washington on the U.S. Department of Energy (USDOE) Hanford Site, approximately 3-1/4 miles west of the Columbia River. The leased area of Columbia site is about 1,100 acres.

6.1.2 The Packwood Lake Hydroelectric Project is located near Packwood, Washington on about 30 acres of company-owned land and about 500 acres of U.S. Forest Service land in the Gifford Pinchot National Forest. This 27.5-megawatt facility, with a 10-megawatt average output per year, was completed in 1964.

6.1.3 The Nine Canyon Wind Project, a wind turbine facility located on leased land south of Kennewick was completed in three phases between August 2002 (Phase 1), December 2003 (Phase 2), and May 2008 (Phase 3). The project has an installed capacity of 95.9 megawatts from 63 wind turbines.

6.1.4 Energy Northwest operates and maintains the White Bluffs Solar Station, a solar power demonstration project developed through a joint effort of Energy Northwest, Bonneville Environmental Foundation, BPA, DOE, and Newport Northwest LLC. The station was constructed in the spring of 2002 on the Energy Northwest IDC site about one mile east-southeast of Columbia. The station is comprised of 242 photovoltaic panels and with a peak output of 38.7 kilowatts DC (converted to 31.5 kilowatts AC).

6.2 Columbia Support Facilities

Support facilities at Columbia range from small modular storage units to 100,000-ft^2 office buildings used to support operation and maintenance of the station. The support functions include mechanical and electrical equipment maintenance, vehicle maintenance, painting and coating, solid and liquid waste processing, training, and general office work.

6.2.1 The Plant Support Facility (Kootenai Building), located 3/4 mile southwest of Columbia, houses staff and facilities for training, telecommunications, and laboratory support (analytical chemistry and instrument calibration).

6.2.2 A warehouse complex located east of the plant provides material receipt, storage, and distribution services.

6.2.3 A pump house on the west bank of the Columbia River supplies water for the Columbia condenser cooling system.

6.2.4 A central sanitary waste treatment facility located to the southeast of Columbia provides treatment for wastewater from Columbia, the IDC (Projects 1 and 4) and the Plant Support Facility.

6.2.5 A security training facility, with a small arms range, is located on the Project 4 site, which is within the boundaries of IDC.

6.2.6 The Independent Spent Fuel Storage Installation (ISFSI) has been constructed north of Columbia to store spent nuclear fuel (SNF) in dry cask storage until a federal repository becomes available.

6.2.7 The electrical output of Columbia is delivered to the Bonneville Power Administration's H.J. Ashe Station located 1/2 mile north of the plant.

6.2.8 A bulk hydrogen storage and supply facility located approximately 3/4 mile south of the plant supplies hydrogen to the Columbia Reactor Feed Water (RFW) system.

6.3 Other Initiatives/Business Ventures

Energy Northwest is pursuing a number of new business initiatives to diversify the organization and reduce Columbia operating costs. Activities include project development and facility management.

6.3.1 APEL, a 90,000 ft^2 high-tech research "incubator" facility in North Richland is owned and managed by Energy Northwest. Founding community stakeholders – Pacific Northwest National Laboratory (PNNL), Port of Benton, the Department of Energy, Washington State University Tri-Cities, the City of Richland and the Tri-City Development Council – continue to provide strategic vision and technical and operational support. Energy Northwest E&RP staff provide environmental technical support for Energy Northwest activities. A PNNL Environmental Compliance Representative and a Field Services (waste management) Representative provide environmental technical support to APEL for PNNL activities.

Application of EMS: The EMS applies to the APEL facility and Energy Northwest's operations within the facility. Likewise, EMS applies when work is performed by Energy Northwest employees for the APEL lessees. PNNL has its own EMS, which is registered under ISO 14001. Other APEL lessees are not covered by Energy Northwest's EMS. APEL lessees conduct all activities in compliance with applicable environmental regulations, permit conditions, commitments, and procedures.

6.3.2 Energy Northwest provides engineering support to the Grant County Public Utility District (PUD) through loaned employees.

Application of EMS: Limited to role as a contractor.

6.3.3 Engineering and maintenance services have been provided to other public power operators of hydroelectric facilities in the Northwest.

Application of EMS: Limited to role as a contractor.

6.3.4 Energy Northwest provides analytical chemistry and instrument calibration services to several “offsite” customers (including Hanford contractors, Washington State University, Philip Services Corporation, and the City of Richland).

Application of EMS: These services are conducted at Energy Northwest facilities by Energy Northwest staff and are within the scope of the EMS. Services conducted offsite are limited to the role as a contractor.

6.3.5 ENOC consists of several hundred thousand square feet of rental office space in North Richland managed by Energy Northwest. Approximately forty-five Energy Northwest personnel have offices in this space.

Application of EMS: The EMS applies to the facilities owned by Energy Northwest, and to that portion of Energy Northwest operations within the building, including work performed by Energy Northwest employees for Energy Northwest.

6.3.6 Energy Northwest has an agreement with Mason County PUD No. 3 to provide operations personnel for the PUD's natural gas plant in their county.

Application of EMS: Limited to role as a contractor.

6.3.7 Energy Northwest has an agreement with Burbank Water and Power to provide operations and maintenance support to the hydroelectric generation at the Tieton Dam.

Application of EMS: Limited to role as a contractor.

6.3.8 Energy Northwest owns the Rattlesnake Mountain Combined Community Communication Facility (CCCF). The facility supports Columbia's emergency communications and is a co-location for local, county, and State emergency response radio equipment. The CCCF is located on USDOE property at the top of Rattlesnake Mountain at an elevation of approximately 3,500 ft. and with controlled access (locked gate on access road). This remote location is only accessible by off-road capable vehicles and weather conditions at the CCCF can be extreme. Access to this site is generally limited to telecommunications personnel for maintenance activities. The facility is not routinely occupied for extended periods.

Application of EMS: Due to the remoteness of the CCCF and limited activities it is not included within the scope of the EMS.

6.3.9 The Energy Northwest IDC is located east of Columbia on a portion of the 970-acre site leased from the USDOE for the terminated Nuclear Projects 1 and 4. It is expected that the site infrastructure will be used to support diversified development. Several companies are leasing existing facilities at the complex.

Application of EMS: The EMS applies to the IDC facility itself, and to Energy Northwest operations within buildings, including work performed by Energy Northwest employees for Energy Northwest, and contractors IDC lessees conduct all activities in compliance with applicable environmental regulations, permit conditions, commitments, and procedures.

7.0 ENVIRONMENTAL ASPECTS

The following environmental aspects have been identified for Energy Northwest operations. Energy Northwest Significant Environmental Aspects have been determined per GBP-ENV-09, Environmental Aspects Identification. Their significance varies at individual Energy Northwest facilities:

- Regulated industrial, hazardous, radioactive, and mixed wastes
- Atmospheric emissions
- Liquid effluents
- Storage or use of chemicals or radioactive materials
- Water consumption
- Energy consumption
- Land use (including structure erection or alteration)
- Resource Use
- Community outreach
- Generation of carbon-free energy

8.0 LICENSES AND PERMITS

Energy Northwest operations are licensed or permitted by numerous Federal, State and local agencies as they relate to environmental media (i.e., air, water, land). Applicable licenses and permits associated with Energy Northwest operations are found on the E&RP SharePoint site.

9.0 EMS ELEMENTS

The Energy Northwest EMS is comprised of nineteen (19) inter-related elements as follows:

1. Context of the organization (Section 9.1);
2. Leadership and commitment (Section 9.2);
3. Environmental Policy (Section 9.3);
4. Organizational roles, responsibilities and authorities (Section 9.4);
5. Actions to address risks and opportunities (Section 9.5);
6. Environmental aspects (Section 9.6)
7. Compliance obligations (Section 9.7)
8. Planning action (Section 9.8)
9. Environmental objectives and planning to achieve them (Section 9.9);
10. Resources (Section 9.10);
11. Competence and awareness (Section 9.11);
12. Communication (Section 9.12);
13. Documented information (Section 9.13);
14. Operational control (Section 9.14);
15. Emergency preparedness and response (Section 9.15);
16. Monitoring, measurement, analysis and evaluation (Section 9.16);
17. Internal EMS Audit (Section 9.17);
18. Management review (Section 9.18);
19. Improvement (Section 9.19);

The following sections include, in parentheses, the clause number from the ISO 14001:2015 Standard. The sections list the requirements of ISO 14001:2015 (*in italics*), along with a description of how Energy Northwest meets the requirements.

9.1 Context of the organization

Energy Northwest's purpose is to produce reliable, affordable, environmentally responsible electric power and deliver it to Northwest public power utilities at the cost of production. A consortium of 27 public utility districts and municipalities across Washington takes advantage of economies of scale and shared services that help utilities run their operations more efficiently and at lower cost, to the benefit of more than 1.5 million customers. Energy Northwest further improves quality of life throughout the Northwest through the generation of clean, reliable electricity from nuclear, wind, hydro and solar projects. The agency owns and operates four electricity generating facilities: White Bluffs Solar Station, Packwood Lake Hydroelectric Project, Nine Canyon Wind Project and Columbia Generating Station (nuclear energy facility). The agency's vision is to be a regional leader in clean energy generation and public power solutions through sustained excellence in performance. The agency's mission is to provide our public power members and regional customers with safe, reliable, cost-effective, responsible power generation and energy solutions.

The intended outcomes of the Energy Northwest EMS are found in the Environmental Stewardship Policy (PSM-5.7). That is, to provide energy services in a manner that responsibly balances environmental and social factors and business needs through the agency's commitments to environmental stewardship, maintenance of the EMS, continual improvement of its environmental performance, compliance with regulations, prevention of pollution, environmental communication, improve efficiency and effectiveness, reduce costs, and earn and retain regulator and community trust.

External and internal issues identified potentially affecting the achievement of the EMS intended outcomes are documented in the Scope of the EMS (above Section 5.0). Interested parties relevant to the Energy Northwest EMS include board of directors, contractors, customers, Department of Energy (DOE), emergency responders, employees, environmental interest groups, management team, Native American tribes, public-at-large, regional schools, regulators, and suppliers. The needs and expectations of these parties have been considered and are documented in a context development document that lines up issues, interested parties and needs and expectations relevant to the EMS, including those that represent compliance obligations.

Annually senior management reviews both qualitative and quantitative EMS performance data to determine if changes are needed to the Policy Statement Manual 5.7, Environmental Stewardship Policy (PSM-5.7) or the environmental objectives and targets; and they identify priorities for continual improvement. The environmental review meeting includes consideration of changes to:

- External and internal issues that are relevant to the EMS
- Needs and expectations of interested parties including compliance obligations

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Understanding the organization and its context (clause 4.1)	
The organization shall determine…. • *…external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended outcomes of its environmental management system.* • *…issues shall include environmental conditions being affected by or capable of affecting the organization.*	The Strategic Plan documents the agency mission vision statement, and core values. The document sets the agency strategic direction. Intended outcomes of the EMS are identified, generally, in Section 2.0, Design of the EMS and, specifically, in the Environmental Stewardship Policy PSM-5.7. Internal and external issues are documented in the context of the organization located on E&RP Collaboration Site.
Understanding the needs and expectations of interested parties (clause 4.2)	
The organization shall determine: *a. the interested parties that are relevant to the environmental management system;* *b. the relevant needs and expectations (i.e. requirements) of these interested parties;* *c. which of these needs and expectations become its compliance obligations.*	Needs and expectations of interested parties are identified in the context of the organization located on E&RP Collaboration Site.
Determining the scope of the environmental management system (clause 4.3)	
The organization shall determine the boundaries and applicability of the environmental management system to establish its scope.	This EMS Program Description (Section 5.0)
When determining this scope, the organization shall consider: *a. external and internal issues;* *b. the compliance obligations;* *c. its organizational units, functions and*	PSM-5.7, Energy Northwest Environmental Stewardship Policy, contains commitments to environmental stewardship, the EMS and continual improvement, environmental compliance, pollution prevention, and communication. The scope is documented in EMS-01 and is made available to interested parties on Energy Northwest

EMS REQUIREMENT	RELEVANT PROCEDURES, ETC.
physical boundaries; *d. its activities, products and services;* *e. its authority and ability to exercise control and influence.* *The scope shall be maintained as documented information and be available to interested parties.*	external website.
Environmental management system (clause 4.4)	
…. the organization shall establish, implement, maintain and continually improve an environmental management system… *The organization shall consider the knowledge gained in 4.1 and 4.2 when establishing and maintaining the environmental management system.*	The EMS is designed to incorporate environmental stewardship into all its activities (as defined in the scope section of this document). The environmental policy addresses stewardship, responsibly balancing environmental and social factors, and business needs. Policies, programs and practices for conducting activities in an environmentally responsible manner have been integrated with environmental and other business systems. The internal and external issues identified in the Context Section present risks and opportunities for Energy Northwest. These risks and opportunities are evaluated as part of the annual review of environmental aspects and objectives and targets. The context of the organization will be used to establish, implement, maintain, and continually improve EMS.

9.2 Leadership and commitment

Senior Management is responsible for instilling the attitude that all employees are responsible for the environment. This commitment is stated in PSM-5.7, Energy Northwest Environmental Stewardship Policy. The General Counsel is the Senior Management Sponsor for the EMS and is ultimately responsible for EMS program implementation and maintenance of its infrastructure.

EMS REQUIREMENT	RELEVANT PROCEDURES, ETC.
Leadership and commitment (clause 5.1)	

Top management shall…. *a. taking accountability for the effectiveness of the environmental management system;* *b. ensuring that the environmental policy and environmental objectives are established and are compatible with the strategic direction and the context of the organization;* *c. ensuring the integration of the environmental management system requirements into the organization's business processes;* *d. ensuring that the resources needed for the environmental management system are available;* *e. communicating the importance of effective environmental management and of conforming to the environmental management system requirements;* *f. ensuring that the environmental management system achieves its intended outcomes;* *g. directing and supporting persons to contribute to the effectiveness of the environmental management system;* *h. promoting continual improvement;* *i. supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.*	PSM-5.7, Energy Northwest Environmental Stewardship Policy is signed by the CEO and has been endorsed by the Executive Board and Board of Directors. The Senior Management Sponsor is accountable to the CEO for ensuring that the policy is implemented and the EMS is maintained. The Manager, E&RP is delegated management and budget authority for the EMS. GBP-ENV-13, Environmental Performance Measurement, describes the environmental objectives and targets implementation process. GBP-AM-02, Energy Northwest Strategic and Business (Excellence) Planning, describes the corporate planning process. It requires the allocation of resources to processes (e.g., EMS) and departments for each fiscal year. Input is received from the strategic planning process and the prior year's business planning results. Department Excellence Plans are then developed. Staffing and budgets are determined based on business plan action requirements. Senior Management responsibilities are described in Attachment 11.1, EMS Roles, Responsibilities and Authorities.

9.3 Environmental Policy

The environmental stewardship policy creates an expectation that Energy Northwest employees will bring an environmental ethic with them wherever they work. Energy Northwest has had a formal policy on environmental protection since May 1982. A policy that conforms to ISO 14001 requirements was issued on July 22, 2003. This policy was signed by the Chief Executive Officer, and endorsed by the Board of Directors and Executive Board. Minor revisions to the policy were made in subsequent revisions.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Environmental Policy (clause 5.2)	

EMS REQUIREMENT	RELEVANT PROCEDURES, ETC.
Top management shall establish, implement and maintain an environmental policy that, within the defined scope of its environmental management system:	PSM-5.7, Energy Northwest Environmental Stewardship Policy, was issued by the CEO after considering legal requirements and stakeholder expectations and concerns.
a. *is appropriate to the purpose and context of the organization, including the nature, scale and environmental impacts of its activities, products and services;* b. *provides the framework for setting environmental objectives;* c. *includes a commitment to the protection of the environment, including prevention of pollution and other specific commitment(s) relevant to the context of the organization;* d. *includes a commitment to fulfil its compliance obligations;* e. *includes a commitment to continual improvement of the environmental management system to enhance environmental performance.*	The policy guides Energy Northwest to provide energy services in a manner that responsibly balances environmental and social factors and business needs. It is corporate in scope, and addresses the operations and facilities noted in Section 6.0. It provides a framework for setting environmental objectives and targets. The policy contains commitments to environmental stewardship, the EMS and continual improvement, environmental compliance, pollution prevention, and communication.
The environmental policy shall: • *be maintained as documented information;* • *be communicated within the organization;* • *be available to interested parties.*	The policy is documented in PSM-5.7, Energy Northwest Environmental Stewardship Policy. It is communicated to employees in accordance with GBP-ENV-10, Environmental Management System Communications, via a variety of methods, including meetings, a brochure, a badge card, newsletter articles, training, and postings. The policy is published on the Energy Northwest external website. A hard copy is also available to anyone upon request.

9.4 Organizational roles, responsibilities and authorities

All employees have a role to play in the EMS. Roles for the following positions are described in Attachment 11.1: Chief Executive Officer, Executive Board, Vice Presidents, General Manager, General Counsel, EMS Management Representative, Line Organizations, Support Organizations, EMS Representatives, EMS Coordinator, Employees, and Contractors.

Responsibilities for environmental compliance and enhancement are distributed among several organizational units in Energy Northwest. Support for EMS elements that are not strictly environmental (such as communication and records management) is provided by a number of organizations. The respective responsibilities of those organizations are also described in Attachment 11.1, under Support Organizations.

Through the Energy Northwest position descriptions/performance plans, the strategic/business planning process, work planning processes, and the training program, staff members are made aware of their responsibilities, authorities, and accountabilities. Energy Northwest

defines the principal accountabilities for each non-bargaining position through position descriptions. For bargaining staff, performance is defined and measured in their contract. Senior management holds staff accountable for their performance.

Training programs such as Plant Access Training and Blue Badge Training address expectations and responsibilities.

The following GBPs are related to the roles, responsibility, and authorities of the EMS element:

- GBP-HR-18, Performance Improvement, indicates staff is expected to plan and conduct work by following environmentally sound work practices and procedures. It notes that staff has a responsibility to notify management of concerns related to environmental issues. It holds non-bargaining staff accountable to environmental Standards of Conduct. It includes guidance for addressing environmental performance concerns.

- GBP-HR-14, Employee Recognition and Awards, includes the Environmental Stewardship Awards Program, which enables use of all Energy Northwest awards for exceptional environmental performance.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Organizational roles, responsibilities and authorities (clause 5.3)	
Top management shall ensure that the responsibilities and authorities for relevant roles are assigned and communicated within the organization.	Attachment 11.1 of this EMS Manual, GBP-HR-18 position descriptions (or contracts for bargaining staff), and the responsibilities sections in procedures define and document roles, responsibilities and authorities. GBP-ENV-14, Work Planning and Control for Environmental Aspects, references ensuring that employees and contractors understand their roles and responsibilities.
Top management shall assign the responsibility and authority for: a. *ensuring that the environmental management system conforms to the requirements of this International Standard;* b. *reporting on the performance of the environmental management system, including environmental performance, to top management.*	The Manager, E&RP is designated as the EMS Management Representative and delegated authority for the budget funding the Energy Northwest EMS. This person's roles, responsibilities, and authority are documented in this EMS Manual, in GBP-ENV-09, Environmental Aspects Identification, GBP-ENV-11, Environmental Management Review, GBP-ENV-13, and in GBP-ENV-15, Pollution Prevention Program Description.

9.5 Actions to address risks and opportunities

GBP-ERM-03, Enterprise Risk Management Program, documents the agency-wide program focused on providing risk management requirements for identifying, analyzing, evaluating, and treating risk within key activities and decisions.

Effective agency-wide risk management is an essential component of Energy Northwest's ability to achieve its strategy and objectives. Enterprise Risk Management is incorporated into the strategic planning process through risk based discussion, evaluation and creation of initiatives to address strategic risks.

Three procedures primarily identify risk and opportunities for EMS related issues:

- GBP-ENV-09, Environmental Aspects Identification requires review of risk and opportunities for environmental aspects, compliance obligations, and other issues identified in the context of the organization.
- GBP-ENV-15 is the process to identify opportunities for improvement to support continual improvement.
- GBP-ENV-13 considers risk and opportunities identified during the annual aspect review and incorporates them into the EMS as part of the Excellence Planning Process per GBP-AM-02, Energy Northwest Strategic and Business (Excellence) Planning.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
General (clause 6.1.1)	
The organization shall establish, implement and maintain the process(es) needed to meet the requirements in 6.1.1 to 6.1.4.	GBP-ENV-09 GBP-ENV-13 GBP-ENV-14 GBP-ENV-15 RPI-29.0 Environmental Compliance Assessments
When planning for the environmental management system, the organization shall consider: *a. the issues referred to in 4.1;* *b. the requirements referred to in 4.2;* *c. the scope of its environmental management system;*	GBP-ENV-13 requires consideration of risk and opportunities when setting objectives and targets.

EMS REQUIREMENT	RELEVANT PROCEDURES, ETC.
…determine the risks and opportunities, related to its environmental aspects, compliance obligations and other issues…that need to be addressed to: • *…achieve its intended outcomes;* • *prevent or reduce undesired effects…* • *achieve continual improvement.*	GBP-ENV-09 requires identifying risks and opportunities related to environmental aspects, compliance obligations, and other issues identified in the context of the organization. GBP-ENV-13 considers risk and opportunities in setting objectives and targets for continual improvement.
…the organization shall determine potential emergency situations…	GBP-EPP-01, Non-Nuclear Emergency Plan addresses the need for readiness for all types of possible non-nuclear emergencies (fire, chemical release, severe weather, loss of electrical power, etc.). GBP-EPP-02, Environmental Emergency Preparedness addresses potential environmental emergencies. EP-01, Emergency Plan Columbia Generating Station addresses emergencies at the Columbia Generating Station and the Owner Controlled Area, and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations.
The organization shall maintain documented information of its: • *risk and opportunities that need to be addressed;* • *process(es) needed….to have confidence they are carried out as planned.*	Risk and opportunities are documented with the annual environmental aspect review per GBP-ENV-09.

9.6 Environmental Aspects

E&RP support staff, along with department EMS Representatives, are responsible for identifying significant environmental aspects and maintaining current environmental information. GBP-ENV-09 defines significance based on five criteria: 1) severity, 2) frequency of the environmental impact, 3) regulatory implications, and 4) internal and 5) external stakeholder issues.

As a result of performing a detailed analysis of activities, products, and services performed at Energy Northwest, seven significant environmental aspects have been identified: 1) waste generation, 2) air emissions, 3) liquid effluents, 4) storage and use of hazardous materials, 5) land use, 6) community outreach, and 7) generation of carbon-free energy.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Environmental aspects (clause 6.1.2)	
…the organization shall determine the environmental aspects of its activities, products and services that it can control and those that it can influence, and their associated environmental impacts, considering a life cycle perspective.	GBP-ENV-09 describes the process used to identify environmental aspects.
When determining environmental aspects, the organization shall take into account: *a. change, including planned or new developments, and new or modified activities, products and services;* *b. abnormal conditions and reasonably foreseeable emergency situations.*	GBP-ENV-09 discusses review and revising environmental aspects in response to planned or new developments (i.e., regulations; concerns of interested parties; new or modified activities identified through the Work Planning Process) and during abnormal conditions such as startup, maintenance, and unplanned shutdowns.
The organization shall determine those aspects that have or can have a significant environmental impact, i.e. significant environmental aspects, by using established criteria.	GBP-ENV-09 identifies the criteria used to determine significant environmental aspects.
The organization shall communicate its significant environmental aspects among the various levels and functions of the organization, as appropriate.	GBP-ENV-10, Environmental Management System Communications, describes the communication process for significant environmental aspects.
The organization shall maintain documented information of its: • *environmental aspects and associated environmental impacts;* • *criteria used to determine its significant environmental aspects;*	GBP-ENV-09 documents the agency's environmental aspects and impacts, criteria to identify significance, and significant environmental aspects.

• *significant environmental aspects.*	

9.7 Compliance obligations

GBP-REG-01, Regulatory Requirements Review, establishes the program that requires departments to ensure that new and revised regulations that may affect Energy Northwest business are routinely evaluated and incorporated, as needed, into policies, procedures and other work practices, to ensure compliance is maintained. RPI-12.0, Review and Management of Legal and Other Requirements, documents the process used by E&RP to identify, review, and track new, revised, or proposed legal requirements and voluntary commitments that are related to the environmental aspects of Energy Northwest activities and programs. RPI-12.0 contains a list of potentially applicable federal, state and local regulations and corresponding significant environmental aspects.

When new or revised requirements are identified that may apply to Energy Northwest, they are tracked by the subject matter expert to ensure that they are reviewed for applicability, and to determine if any actions are needed to conform. Requirements are communicated to affected staff via procedures (e.g., desk instructions, Plant Procedure Manual, Site Wide Procedures, General Business Procedures (GBP)), training, and/or email, as appropriate. Facility specific permit requirements or operating limits are communicated formally to the appropriate line manager.

New or revised requirements are communicated to suppliers and contractors (as necessary) via the procurement and/or contracting process and through training. Subject matter experts are available to provide technical assistance to line organizations impacted by new and changed requirements and to develop strategies that minimize the fiscal impact of new requirements on operations, and to ensure compliance.

Energy Northwest operations are subject to regulation and oversight by a number of federal, state and local agencies. These agencies are identified in Attachment 11.3.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Compliance Obligations clause (6.1.3)	

EMS REQUIREMENT	RELEVANT PROCEDURES, ETC.
Compliance Obligations clause (6.1.3)	
The organization shall: *a. determine and have access to the compliance obligations related to its environmental aspects;* *b. determine how these compliance obligations apply to the organization;* *c. take these compliance obligations into account when establishing, implementing, maintaining continually improving its environmental management system.*	GBP-REG-01 implements the Regulatory Review Program with requirements for Energy Northwest departments. RPI-12.0 describes E&RP's process of reviewing compliance obligations. GBP-ENV-09 requires consideration of legal requirements. Compliance obligations are taken into account in setting objectives and targets.
The organization shall maintain documented information of its compliance obligations.	RPI-12.0 RPI-29.0 provides requirements for documenting assessments.

9.8 Planning action

GBP-AM-02, Energy Northwest Strategic and Business (Excellence) Planning, describes the corporate planning process. Environmental objectives and targets are set per GBP-ENV-13 and take into account a number of factors including significant environmental aspects, compliance obligations, and risk and opportunities. The Environmental Excellence Plan identifies actions to achieve its objectives and targets.

EMS REQUIREMENT	RELEVANT PROCEDURES, ETC.
Planning action (clause 6.1.4)	
The organization shall plan: *a. To take actions to address its:* *1. significant environmental aspects;* *2. compliance obligations;* *3. risks and opportunities identified in 6.1.1*	GBP-AM-02 GBP-ENV-09 GBP-ENV-13 RPI-12.0
b. how to: *1. integrate and implement the actions into its environmental management system processes, or other business processes;* *2. evaluate the effectiveness of these actions.*	Environmental Excellence Plan identifies actions to achieve its objectives and targets. GBP-ENV-11 includes reviewing environmental performance including objectives and targets during the Annual Management Review Meeting.
When planning these actions, the organization shall	PSM-5.7 states that energy services will be

consider its technological options and its financial, operational and business requirements.	provided in manner that balances environmental, social, and business needs. GBP-ENV-14 states that technical and economic feasibility should be considered when identifying operational controls or mitigating actions.

9.9 Environmental objectives and planning to achieve them

The Energy Northwest process for establishing objectives and targets at each level of the organization is described in GBP-AM-02. The Corporate Strategic Plan contains strategic initiatives, which include environmental initiatives. E&RP develops and proposes to senior management environmental objectives and targets consistent with any environmental strategic initiatives and other applicable considerations per GBP-ENV-13. These objectives and targets are incorporated into an Environmental Excellence Plan that contains specific, measurable actions assigned to the appropriate EN department personnel to achieve the stated objectives and targets.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Environmental objectives (clause 6.2.1)	
The organization shall establish environmental objectives at relevant functions and levels, taking into account the organization's significant environmental aspects and associated compliance obligations, and considering its risks and opportunities.	GBP-AM-02 describes the business planning process of setting strategic initiatives. On an annual basis, strategic initiatives are documented in the corporate Strategic Plan. E&RP develops, for management approval, objectives and targets consistent with the strategic initiative(s), as applicable, and documents in the Environmental Excellence Plan.
The environmental objectives shall be: *a. consistent with the environmental policy;* *b. measurable (if practicable);* *c. monitored;* *d. communicated;* *e. updated as appropriate.*	GBP-ENV-13 describes the development of environmental objectives and targets, what is considered, and how they are implemented. GBP-ENV-10 describes the communication process for internal communication, including objectives and targets.
The organization shall maintain documented information on the environmental objectives.	Documentation of objectives and targets is maintained on SharePoint.
Planning actions to achieve environmental objectives (clause 6.2.2)	
…the organization shall determine: • *what will be done;* • *what resources will be required;*	GBP-ENV-13 describes the environmental objectives and targets implementation process.

• *who will be responsible;* • *when it will be completed;* • *how the results will be evaluated, including indicators for monitoring progress toward achievement of its measurable environmental objectives.*	The Environmental Excellence Plan contains the environmental objectives and targets that support the environmental initiatives in the EN Strategic Plan. Objectives in addition to this may be developed and are updated as needed. The Environmental Excellence Plan includes actions with milestones (steps and dates) and ownership.
The organization shall consider how actions to achieve its environmental objectives can be integrated into the organization's business processes.	GBP-AM-02 describes the business planning process of setting strategic initiatives. On an annual basis, strategic initiatives are documented in the corporate Strategic Plan. E&RP develops, for management approval, objectives and targets consistent with the strategic initiative(s), as applicable, and documents in the Environmental Excellence Plan.

9.10 Resources (clause 7.1)

GBP-AM-02, Energy Northwest Strategic and Business (Excellence) Planning, describes the corporate planning process. It requires the allocation of resources to processes (e.g., EMS) and departments for each fiscal year. Input is received from the strategic planning process and the prior year's business planning results. Department Excellence Plans are then developed. Staffing and budgets are determined based on business plan action requirements.

9.11 Competence and awareness

Hiring processes ensure staff meets minimum qualifications, augmented as necessary by additional training. The Energy Northwest training policy is stated in PSM-6.11, Training - Qualification. The policy indicates Energy Northwest uses the Systematic Approach to Training (SAT) for regulatory and industry standards, and may use a graded approach to SAT for non-regulatory or industry standard training. The policy requires line managers to identify duties that call for training.

GEN-TQS-01, Training Program Administration, describes the administration of the Columbia Generating Station Training Program and outlines training administration responsibilities. Training needs for most staff are captured in the Energy Northwest Personnel Qualification Directory (PQD), an online module of the Asset Suite system that tracks training requirements and provides notification of the need to update training. (NOTE: Some offsite facilities have alternate training tracking systems.) Asset Suite provides a listing of all training courses that Energy Northwest provides to staff.

During work planning processes, described in GBP-ENV-14, applicable requirements are identified, including training requirements. This combination of processes, programs, and procedures ensure that only staff with appropriate qualifications are assigned to tasks. Department managers and supervisors, with support from the training staff, have prime responsibility to train staff to be competent to perform their work.

Training courses have been developed to enhance environmental awareness and provide staff with necessary skills to identify environmental concerns.

Green Badge – is provided to employees and contractors who require unescorted access to the Columbia ”protected area“ and the Columbia ”radiological controlled area (RCA)”. The training is presented in two parts: 1) Plant Access Training (PAT) and 2) Radiation Worker Training (RWT). Individuals who need access to the protected area take only PAT.

Individuals who need access to the RCA must take RWT in addition to PAT. RWT includes information on 1) radiation sources, types and measures; 2) biological effects; 3) limits and guidelines; 4) dosimetry; 5) contamination; 6) exposure; and 7) radioactive waste.

Blue Badge – is provided to Energy Northwest employees and contractors who do not need access to the “protected area”.

Job-Specific Training - Staff whose job activities can significantly impact the environment have been identified and receive job-specific training. Since the PAT awareness-level training provides many topics typically covered under job-specific training, the approach for identifying the target employees was tailored to focus on those persons who perform the following activities:

a. Those with significant aspects not specifically addressed in PAT training (e.g., Dangerous Waste generation and management);

b. Operations controlled by a regulation or regulatory permit; and

c. Those with unique conditions that would benefit from specific instructions to address environmental issues.

Columbia contractor training requirements are described in PPM 1.4.7, Control of Supplemental Personnel. This PPM discusses training requirements for Technical Representatives and those supervising contractors, and qualifications for contractors (e.g., level of technical competence and knowledge and compliance with applicable procedures, briefings, etc.).

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Competence (clause 7.2)	
The organization shall:	Hiring processes ensure staff meets minimum

a. determine the necessary competence of person(s) doing work under its control that affects its environmental performance and its ability to fulfil its compliance obligations; *b. ensure that these persons are competent on the basis of appropriate education, training or experience;* *c. determine training needs associated with its environmental aspects and its environmental management system;* *d. where applicable, take actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken*	qualifications, augmented as necessary by additional training needs as defined in PQD. Asset Suite module - PQD for Columbia Personnel. GBP-ENV-14. GEN-TQS-01. Green Badge Training. Blue Badge Training. Requirements in plans (e.g., Spill Plan) and procedures.
The organization shall retain appropriate documented information as evidence of competence.	Records of training are maintained in PQD and Department training files.
Awareness (clause 7.3)	
The organization shall ensure persons doing work under the organization's control are aware of: *a. the environmental policy;* *b. the significant environmental aspects and related actual or potential environmental impacts associated with their work;* *c. their contribution to the effectiveness of the environmental management system, including the benefits of enhanced environmental performance;* *d. the implications of not conforming with the environmental management system requirements, including not fulfilling the organization's compliance obligations.*	GBP-ENV-10, defines internal and external communication process. GBP-ENV-14 EMS and You Brochure

9.12 Communication

At Energy Northwest, the majority of EMS communication requirements are fulfilled in four procedures:

- GBP-ENV-10, Environmental Management System Communications - the umbrella document that defines and/or references all communication procedures.
- RPI-8.0, Processing of Regulatory and Industry Correspondence, provides for documentation of external communication with regulatory and industry agencies.

- GBP-REC-02, Department Management of Record, documents the receipt, documentation, and response to external requests for public records.

- GBP-COM-06, Chief Executive Officer Event Notification, provides guidance on what events require CEO notification and time frames. Examples include events such as emergency classification of Unusual Event or Higher, workplace incidents that may result in adverse publicity, an issue raised by a regulatory agency if judged to be significant, and environmental damage estimated to exceed $100,000.

Other relevant communication procedures and documents include:

- GBP-COM-01, Preparation of Documents for Submittal to Energy Northwest Governing Boards

- GBP-COM-02, Developing Content for Communications Tools

- Public Affairs maintain a Public Inquiry Log to track EMS-related inquiries.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Communication (clause 7.4.1)	
The organization shall establish, implement and maintain the process(es) needed for internal and external communications relevant to the environmental management system, including: *a. on what it will communicate;* *b. when to communicate;* *c. with whom to communicate;* *d. how to communicate.*	GBP-ENV-10 defines internal and external communications and references other relevant procedures.
When establishing its communication process(es), the organization shall: • *take into account its compliance obligations;* • *ensure that environmental information communicated is consistent with information generated within the environmental management system, and is reliable.*	GBP-ENV-10 RPI-8.0
The organization shall respond to relevant communications on its environmental management system.	RPI-8.0 defines procedures for regulatory and industry correspondence. GBP-ENV-10 and the Public Inquiry Log cover procedures for all other external communications.
The organization shall retain documented	The Regulatory Communication Database keeps a

information as evidence of its communications, as appropriate.	record of all communications to regulators and is located on SharePoint.
Internal communication (clause 7.4.2)	
The organization shall: *a. internally communicate information relevant to the environmental management system among the various levels and functions of the organization, including changes to the environmental management system, as appropriate;* *b. ensure its communication process(es) enable(s) persons doing work under the organization's control to contribute to continual improvement.*	GBP-ENV-10 includes: • Activities necessary to provide internal and external communications in support of the EMS; • Support of continuous improvement of the EMS by soliciting and responding to feedback from key audiences; and • It defines key audiences and covers site neighbors and all types of employees. GBP-COM-07, Change Management Process GBP-ENV-15 defines the process for submitting P2 Suggestions.
External communication (clause 7.4.3)	
The organization shall externally communicate information relevant to the environmental management system, as established by the organization's communication process(es) and as required by its compliance obligations.	GBP-ENV-10 RPI-8.0

9.13 Documented information

Document control requirements are addressed primarily through GBP-DOC-01, Document Control, and GBP-DOC-03, Controlled Form Creation, Revision and Cancellation, which establishes the corporate level document control program.

In addition, GBP-PRO-01 requires the use of the SWP-PRO series for preparation, distribution, and revision of procedures. SWP-PRO-04, Procedure Program - Including Procedures, Instructions, Forms and Manuals, describes the procedures program. It applies to all levels of procedures, instructions, and forms, that affect Columbia nuclear operations and the ISFSI and to GBPs, which apply to all Energy Northwest activities. It describes:

a. the document hierarchy (starting with policies), and how the need for a procedure is determined;
b. preparation, review and approval (cross-referencing SWP-PRO-02, Preparation, Review, Approval, and Distribution of Procedures, and SWP-PRO-03, Writer's Manual);
c. format;
d. vendor procedures (which are either approved with the governing procedure or through the vendor submittal review and approval process); and
e. procedure use requirements (e.g., "all users are responsible for verifying that the procedures they are using are the correct revision...").

SWP-PRO-01, Procedure and Work Instruction Use and Adherence, also includes requirements to thoroughly review procedures prior to use, that strict adherence to approved written procedures is expected, and describes the "ASSET SUITE Document Management System" database. Revision information is available in Asset Suite.

The Energy Northwest document control system supports location of documents. The most current internal operating procedures for Columbia are maintained in the online Asset Suite system. Revision numbers and dates are tracked in the system, and previous revisions are also available online. There are a number of triggers for document review and update, such as identification of new or revised source material. Desk instructions and other standard operating procedures are controlled, but are not included in Asset Suite.

Two procedures define the records management program:

- GBP-REC-02 establishes the overall requirements for the Energy Northwest's Records Management Program. This procedure establishes requirements to address the generation, turnover, transfer, storage, maintenance, retention and disposition of records.

- SWP-REC-02 establishes requirements for generation, turnover, transfer, storage, maintenance, retention and disposition that are unique to quality assurance records.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
General (clause 7.5.1)	
The organization's environmental management system shall include: *a. documented information required by this International Standard;* *b. documented information determined by the organization as being necessary for the effectiveness of the environmental management system.*	Documents required by ISO 14001:2015 are referenced in each section in this EMS Program Manual. The retention period, classification, and storage location of environmental records is shown on the EN Records Inventory and Disposition Schedule (RIDS).
Creating and updating (clause 7.5.2)	
…the organization shall ensure appropriate: *a. identification and description (e.g. a title, date, author, or reference number);* *b. format (e.g. language, software version, graphics) and media (e.g. paper, electronic);* *c. review and approval for suitability and adequacy.*	GBP-PRO-01 (referencing SWP-PRO series) GBP-DOC-01 and SWP-DOC-01 address approving controlled documents prior to issue. SWP-DOC-01 also requires controlled documents to be reviewed for technical adequacy by qualified personnel prior to approval for issue. GBP-PRO-01 (referencing SWP-PRO series) addresses review and approval of procedures.
Control of documented information (clause 7.5.3)	
Documented information required by the	GBP-DOC-01, SWP-DOC-01, and GBP-PRO-01

environmental management system and by this International Standard shall be controlled to ensure: *a. it is available and suitable for use, where and when it is needed;* *b. it is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity).*	(referencing SWP PRO series). GBP-DOC-01 requires ensuring that relevant versions of applicable documents are available at points of use. SWP-DOC-01 addresses ensuring access of applicable documents at points of use.
For the control of documented information, the organization shall address the following activities as applicable: • *distribution, access, retrieval and use;* • *storage and preservation, including preservation of legibility;* • *control of changes (e.g. version control)* • *retention and disposition.*	GBP-DOC-01, SWP-DOC-01, GBP-DOC-03, and GBP-PRO-01 (referencing SWP PRO series). GBP-REC-02 and SWP-REC-02 establishes the overall requirements Record Management requirements. The retention period, classification, and storage location of environmental records is shown on the EN Records Inventory and Disposition Schedule (RIDS).
Documented information of external origin determined by the organization to be necessary for the planning and operation of the environmental management system shall be identified, as appropriate, and controlled.	RPI-12.0 addresses management of legal and other requirements. SWP-PRO- series describe the document hierarchy (starting with policies), how the need for a procedure is determined; preparation, review and approval; format; vendor procedures (which are either approved with the governing procedure or through the vendor submittal review and approval process); and procedure use requirements for the Administrative Procedures Manual for Columbia (the corporate-level procedure location).

9.14 Operational control

Engineered and administrative operational controls are in place to manage environmental aspects and impacts. Administrative controls are documented in procedures and plans. Engineered controls include measures such as spill containment, and filters for radiological effluent controls, etc., with operating criteria specified as necessary in procedures. Security is provided in buildings and facilities to prevent unauthorized entry.

A number of operational control programs (described in Attachment 11.2) have been developed and implemented. Programs and operational controls in place to manage these aspects are described in Attachment 11.2. There is also an environmental monitoring program that covers a variety of aspects, including:

- Air Emissions (see Air Emissions, Asbestos, and Refrigerants);
- Liquid Effluents (see Industrial Wastewater, Sanitary Wastewater);

- Storage and Use of Hazardous Materials (see Chemical Control, Community Right-to-Know, PCBs, Emergency Spill Preparedness and Response, and Pollution Prevention);
- Waste Generation (see Solid Waste, Hazardous [Dangerous] Waste, Mixed Waste, Radioactive Waste, and Pollution Prevention);
- Land Use (see Land Use);
- Community Outreach; and
- Generation of Carbon-Free Energy.

Contractors are made aware of Energy Northwest's commitment to Environmental Stewardship through the General Provisions for Consultant and Technical Services attachments to contracts and other procurement documents, which include EMS clauses that emphasize Environmental Program Requirements. In addition, a contractor and vendor information brochure that emphasizes the EMS is provided. PPM 1.4.7, Control of Supplemental Personnel, discusses requirements for contractors at Columbia. Additionally, using the guidance offered in the User's Guide to Contracting, the Contracting Officer and/or Technical Representative are prompted to contact E&RP for guidance if the planned work:

- Involves the storage, handling, or use of chemicals or radioactive materials;
- Generates waste (solid, hazardous, mixed, etc.) or air emissions or liquid effluent;
- Has the potential for hazardous materials or petroleum product spill;
- Requires significant use of energy or water; or
- Involves significant disturbance of the land surface.

The Contracting Officer and/or Technical Representative also offers general EMS information to the contractor through a brochure or other materials as needed, e.g., during pre-job briefings.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Operational planning and control (clause 8.1)	
The organization shall establish, implement, control and maintain the processes needed to meet environmental management system requirements, and to implement the actions identified in 6.1 and 6.2, by: • *establishing operating criteria for the process(es);* • *implementing control of the process(es), in accordance with the operating criteria.*	GBP-ENV-09 describes the process for identifying significant aspects. All key work activities have been evaluated for their impact on significant environmental aspects. GBP-ENV-14 establishes the corporate work planning and control process and requires development of procedures where the absence of such procedures could lead to deviations from the Energy Northwest environmental policy and objectives. Attachment 11.2

	PJM-2-1, Project Teams, includes E&RP participation on projects from the beginning to the closeout activities. This provides identification of environmental aspects during the initial Project Team meeting and identification of potential actions for consideration to reduce impacts to the environment during project development and implementation.
The organization shall control planned changes and review the consequences of unintended changes, taking action to mitigate any adverse effects, as necessary.	GBP-ENV-14 requires review of new or modified activities, those that have not already been reviewed, and any activities where failure of existing operational controls results in potential or actual environmental impact. For activities at Columbia requiring plant design changes, procedures DES-2-1, Plant Design Changes, and DES-2-7, Minor Plant Design Changes, require an initial screening that includes environmental review for design inputs. DES-2-1 provides an environmental checklist to be used for that review. In addition, when activities could potentially require changes to the plant licensing basis, an applicability determination form must be completed. That form requires an evaluation of the environmental impact of the proposed activity. Work planning procedures also exist at the organizational level. For example, at Columbia this includes: SWP-MAI-01, Work Management Process Overview, PPM 1.3.68, Work Management Process, PPM 1.3.76, Integrated Risk Management, Asset Suite Planners Guide, and FCEI-3.1.10, Environmental Management in the Work Planning Process.
The organization shall ensure that outsourced processes are controlled or influenced. The type and extent of control or influence to be applied to the process(es) shall be defined within the environmental management system.	The EBS (now known as ES&D) General Provisions; Appendix D General Provisions for Consultant and Technical Services, Invitation for Bid (equipment), Invitation for Bid (Construction), and the General Provisions for Purchase Orders contain contract clause language regarding environmental expectations of contractors. The User''s Guide to Contracting requires that Technical Representatives and/or Contracting Officers contact E&RP if a new project/contract has the potential to impact significant environmental aspects.

	SWP-PUR-01, Procurement of Services, requires a determination of procurement requirements for contractors and suppliers at Columbia. The Work Supervisor reviews the Service Evaluation, noting any added controls required from the applicable Technical and Administrative reviews, and establishing a mechanism to assure that controls are implemented by suppliers performing onsite services. SWP-PUR-04, Material, Equipment, Parts and Supplies Procurement, addresses purchasing of supplies for use within Columbia. It requires that an MSDS be provided, and a Chemical Permit acquired per SWP-CHE-05, Chemical Management Program, if applicable, along with review by Industrial Safety and Fire Protection Engineer.
Consistent with a life cycle perspective, the organization shall: *a. establish controls, as appropriate, to ensure that its environmental requirement(s) is (are) addressed in the design and development process for the product or services, considering each life cycle stage;* *b. determine its environmental requirement(s) for the procurement of products and services, as appropriate;* *c. communicate its relevant environmental requirement(s) to external providers, including contractors;* *d. consider the need to provide information about potential significant environmental impacts associated with the transportation or delivery, use, end-of-life treatment and final disposal of its product and services.*	SWP-PUR-01, Procurement of Services and the User's Guide to Contracting provides requirements for an environmental review of contractor services for Columbia. Also, the contract requisition routing and review system in Asset Suite ensures environmental reviews when necessary. GBP-ENV-14 The User's Guide to Contracting requires that Technical Representatives and/or Contracting Officers contact E&RP if a new project/contract has the potential to impact significant environmental aspects. Energy Northwest products and services within the scope of the EMS are electricity (product) and engineering, calibration, and laboratory services, with little or no potential significant environmental impacts.

9.15 Emergency preparedness and response

Energy Northwest has an Emergency Preparedness/Response program for Columbia, as required to maintain compliance with requirements for operating a nuclear power plant. The program includes procedures for emergency preparedness and response, and drills are conducted.

GBP-EPP-02, Environmental Emergency Preparedness, describes planning for and response to industrial environmental emergencies at Energy Northwest facilities. This procedure does not include response to Columbia nuclear or radiological emergencies. As a commercial nuclear power generating facility licensed by the NRC, Columbia has a comprehensive program designed to enable an effective response to emergency situations. The core of this program is the ”Columbia Generating Station Emergency Plan“ and its implementing procedures.

- Each of the following offsite locations has a spill/fire/emergency response plan: Packwood, Nine Canyon, IDC, APEL, ENOC, and White Bluffs.

Select Procedures or plans relevant to spill response at Columbia are:

- ABN-HAZMAT, Hazardous Materials Spills/Releases - provides plant operators with quick guidance for immediate actions, including spills and releases. It also discusses potential consequences of spills. It indicates, ”Hazardous material spills may require reporting to local, State, and Federal agencies, depending on the type and quantity of material spilled.” ABN-HAZMAT directs staff to follow GBP-ENV-18, Oil and Hazardous Substance Spill Prevention, Control and Counter-Measure Plan, which incorporates reporting requirements. It is an Operations emergency procedure activated when a spill/release of hazardous material occurs on Energy Northwest property, or a hazardous material spill/release has the potential to threaten Control Room habitability.

- GBP-ENV-18 is the principal guidance for spill response at Columbia. The procedure provides measures to minimize the risk of releases of hazardous substances and prescribes appropriate responses to such releases. The procedure covers prevention and preparedness, response actions, spill site assessment, cleanup and disposal, notifications and reports, training, and medical surveillance.

- PPM 1.10.1, Notification and Reportable Events – provides guidance on catalog event-related reports such as for spills and unauthorized releases for Columbia.

Volume 13, Emergency Plan implementing procedures (EPIPs), directs responses from radiological accidents at Columbia that could impact the environment. EPIP-13.8.1, Emergency Dose Projection System Operations, provides instructions for the use of computer models to predict offsite dose rates, integrated doses, and radioactive material deposition within the 10-mile plume emergency planning zone and the 50-mile ingestion emergency planning zone.

EPIP-13.9.1, Environmental Field Team Monitoring Operations, provides instruction to field team personnel for sampling and field analyses to confirm radiological releases through field measurements. EPIP-13.13.3, Intermediate Phase MUDAC Operations, provides direction for evaluating post-accident radiological conditions and for developing recommendations that lead to protection of the public and reducing further spread of contamination to the environment.

Emergency preparedness and response procedures have been reviewed and revised after drills, and lessons learned have been incorporated.

The Control Room is established as a focal point for reporting spills at Columbia. The Shift Manager/Control Room Supervisor serves as the on-duty emergency coordinator. The primary initial responders for emergency situations are the Plant Fire Brigade members, with backup from the Hanford Fire Department. E&RP provides direction for recovery, cleanup and disposal of spill residues. Initial external reports are by the Control Room or E&RP. E&RP prepares, with input from others, follow-up reports that may be required by regulators.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Emergency preparedness and response (clause 8.2)	
The organization shall establish, implement and maintain the process(es) needed to prepare for and respond to potential emergency situations identified in 6.1.1.	Columbia and offsite facilities have emergency response plans.
The organization shall:	
a. prepare to respond by planning actions to prevent or mitigate adverse environmental impacts from emergency situations; *b. respond to actual emergency situations;* *c. take action to prevent or mitigate the consequences of emergency situations, appropriate to the magnitude of the emergency and the potential environmental impact;* *d. periodically test the planned response actions, where practicable;* *e. periodically review and revise the process(es) and planned response actions, in particular after the occurrence of emergency situations or test;*	EP-01 Emergency Plan GBP-EPP-01 GBP-EPP-02 SWP-EPP-01 Emergency Response Organization and Training, ensures the Emergency Plan is effective with adequate resources to manage emergencies. PPM 1.3.10 Plant Fire Protection Program Implementation, ensures regular drills on environmental (fire) emergencies. EPI-21 Drill and Exercise Development and implementation, ensures regular drills on environmental emergenies (floods). EPIP-Series GBP-ENV-18

f. provide relevant information and training related to emergency preparedness and response, as appropriate, to relevant interested parties, including persons working under its control.	Offsite locations emergency response plan: Packwood, Nine Canyon, IDC, APEL, ENOC, and White Bluffs. ABN-HAZMAT GBP-EPP-02 requires drills. GBP-EPP-02 requires periodic review and revision of emergency preparedness and response procedures, in particular after accidents or emergencies. Findings are documented via an Action Request - Condition Report in accordance with GBP-CAP-01 which documents any accident/emergency event and ensures corrective/preventive actions are taken, including modification of procedures as necessary. Arrangements have been made to coordinate with the Hanford Fire Department for events at Richland facilities.
The organization shall maintain documented information to the extent necessary to have confidence that the process(es) is (are) carried out as planned.	GBP-ENV-02 requires documentation of drill conduct and results. Lessons learned are incorporated in procedures and documents as necessary.

9.16 Monitoring, measurement, analysis and evaluation

With regard to monitoring and measuring of objectives and targets, Energy Northwest has a well-developed strategic and business planning system, and provides regular feedback to employees and managers on status and progress. Action items associated with business plans are assigned and can be tracked by the Action Request – Condition Report process (AR-CR). Color-coded performance reports (e.g., green = exceeds expectations, yellow = needs improvement, etc.) are updated regularly and available to employees and the Board of Directors through the monthly Business Plan Report.

GBP-ENV-13 documents the measures, data collection, and reporting.

Evaluation of the adequacy of operational controls occurs in accordance with GBP-ENV-14 and its associated organization-level procedures, and RPI-29.0, Environmental Compliance Assessments.

Energy Northwest maintains a routine environmental monitoring program (described in Attachment 11.2) for radiological and non-radiological pollutants, including liquid effluents and air emissions. There are administrative procedures for permit compliance monitoring (e.g., for NPDES and REMP) and other required monitoring programs. The Energy Northwest analytical laboratory has a set of calibration and laboratory procedures. These procedures

address document control, analytical lab instructions, sample analysis sheets, quality reviews, and a digital information management system, and include:

- SOP 11.11, Columbia Generating Station Groundwater Monitoring Program, Standard Operating Procedure;
- SWP-CHE-02, Chemical Process Management and Control, addresses compliance with NPDES requirements at Columbia;
- PPMs Vol. 12, 16 and 17 at Columbia;
- GBP-ENV-17, Managing Regulated Waste at Columbia Generating Station, for regulated waste management at Columbia;
- PPM 1.11.1, Radiological Environmental Monitoring Program (REMP) Implementation Procedure;
- License Control Specifications;
- PPM 1.14.5, NPDES Permit Compliance, Environmental Control at Columbia;
- Avian and Bat Monitoring Plan for the Nine Canyon Wind Project; and
- Various, Supplemental Analytical Laboratory Instructions (SALIs) and Standard Operating Procedures (SOPs), Environmental Services

Energy Northwest Calibration Services (ENSL) provides calibration services and is treated as an external vendor subject to audits that are approved by Supplier Quality. They comply with 10 Code of Federal Regulations (CFR) 50 Appendix B, NQA-1, ANSI/NCSL Z540-1 and ANSI/ISO/IEC 17025 as outlined in the ENSL Quality Manual (QM-1). ENSL laboratory information management system (LIMS) is utilized for tracking, recall and monitoring of M&TE.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
General (clause 9.1.1)	
The organization shall monitor, measure, analyse and evaluate its environmental performance.	GBP-ENV-13 documents the measures, data collection, and reporting.
The organization shall determine: *a. what needs to be monitored and measured;* *b. the methods for monitoring, measurement, analysis and evaluation, as applicable, to ensure valid results;* *c. the criteria against which the organization will evaluate its environmental performance, and*	GBP-ENV-13 Monitoring and measuring requirements are identified in environmental permits. Applicable licenses and permits associated with Energy Northwest operations are found on the E&RP SharePoint site. Attachment 11.2 discusses operational controls for significant environmental aspects and required

appropriate indicators; *d. when the monitoring and measuring shall performed;* *e. when the results from monitoring and measurement shall be analysed and evaluated.*	monitoring and measuring. Method for monitoring and measurement is identified in applicable licenses and permits. Evaluation of the adequacy of operational controls is evaluated during the work planning and control process (GBP-ENV-14), and during compliance assurance self assessments (conducted in accordance with RPI-29.0). The time frame for monitoring measurements is identified in applicable licenses and permits. The Environmental Excellence Plan identifies due dates for actions supporting environmental performance indicators. Results from monitoring and measuring are analyzed and reported per applicable licenses, permits, and Environmental Excellence Plan.
The organization shall ensure that calibrated or verified monitoring and measurement equipment is used and maintained, as appropriate.	See procedure references above.
The organization shall evaluate its environmental performance and the effectiveness of the environmental management system.	GBP-ENV-11 GBP-ENV-13 GBP-ASU-02, EMS Audits
The organization shall communicate relevant environmental performance information both internally and externally, as identified in its communication process(es) and as required by its compliance obligations.	GBP-ENV-11
The organization shall retain appropriate documented information as evidence of the monitoring, measurement, analysis and evaluation results.	Environmental records are managed in accordance with GBP-REC-02, SWP-REC-02, and relevant SWPs.
Evaluation of compliance (clause 9.1.2)	
The organization shall establish, implement and maintain the process(es) needed to evaluate fulfilment of its compliance obligations.	RPI-29.0 provides requirements and guidance for periodically assessing the performance of Energy Northwest with regard to applicable environmental requirements. SWP-ASU-02 establishes requirements for management walkthroughs at Columbia.

The organization shall: *a. determine the frequency that compliance will be evaluated;* *b. evaluate compliance and take action if needed;* *c. Maintain knowledge and understanding of its compliance status.*	RPI-29.0
The organization shall retain documented information as evidence of the compliance evaluation result(s).	RPI-29.0 provides requirements for documenting assessments.

9.17 Internal EMS Audit

EMS audit requirements are documented in GBP-ASU-02, EMS Audit. This procedure addresses auditing the EMS to determine whether it conforms with planned arrangements, including the requirements of ISO 14001, and determining whether it has been properly implemented and maintained. It addresses responsibilities, scope, frequency, requirements, team selection and qualifications, documentation of audit results, and corrective action.

NOTE: Planning the scope of the internal EMS audit should take into account and/or be coordinated with EMS assessment requirements contained in the Washington State Department of Ecology (WSDOE) EMS Alternative to Pollution Prevention Planning, February 1997 (i.e., annual assessment of the following elements: pollution prevention, objectives and targets, responsibilities and resources, and training).

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
General (clause 9.2.1)	
The organization shall conduct internal audits at planned intervals to provide information on whether the environmental management system:	GBP-ASU-02 addresses audit scope and frequency. EMS audits are included on the long range schedule.
a. conforms to: *1) the organization's own requirements for its environmental management system;* *2) the requirements of this International Standard;* *b. Is effectively implemented and*	GBP-ASU-02 addresses the requirements to audit the EMS to determine if it conforms to planned arrangements including requirements of ISO 14001 and WSDOE "Environmental Management System (EMS) Alternative to Pollution Prevention Planning". GBP-ASU-02 requires the audit to determine if the EMS has been properly implemented and maintained.

maintained.	
Internal audit programme (clause 9.2.2*)*	
The organization shall establish, implement and maintain (an) internal audit programme(s), including the frequency, methods, responsibilities, planning requirements and reporting of its internal audits.	GBP-ASU-02 addresses responsibilities, scope and frequency, requirements, and documentation of results. GBP-ENV-11 requires reporting results from internal audits to Senior Management.
…the organization shall take into consideration the environmental importance of the processes concerned, changes affecting the organization and the results of previous audits.	GBP-ASU-02 indicates that audit scope and frequency shall be based on consideration of past performance and the environmental importance of the activity.
The organization shall: *a. Define the audit criteria and scope for each audit;* *b. Select auditors and conduct audits to ensure objectivity and the impartiality of the audit process;* *c. Ensure that the results or the audits are reported to relevant management.*	GBP-ASU-02 addresses EMS audit scope, audit criteria, team selection and qualification. GBP-ENV-11 requires reporting results from internal audits to Senior Management.
The organization shall retain documented information as evidence of the implementation of the audit programme and the audit results.	GBP-ASU-02 requires that documentation from the internal audit be processed to plant files in accordance with GBP-REC-02.

9.18 Management Review

GBP-ENV-11 describes the management review requirements. The EMS Management Representative, with assistance from the EMS Coordinator, EMS Representatives and the other management system owners, has prime responsibility for collecting, compiling, and presenting the required information to senior management to enable them to carry out this evaluation.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
Management review (clause 9.3)	

Top management shall review the organization's environmental management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness.	GBP-ENV-11
The management review shall include consideration of: *a. the status of actions from previous management reviews;* *b. changes in:* *1. External and internal issues that are relevant to the environmental management system;* *2. the needs and expectations of interested parties, including compliance obligations;* *3. its significant environmental aspects;* *4. risks and opportunities;* *c. the extent to which environmental objectives have been achieved;* *d. information on the organization's environmental performance, including trends in:* *1. nonconformities and corrective actions;* *2. monitoring and measurement results;* *3. fulfilment of its compliance obligations;* *4. audit results;* *e. adequacy of resources;* *f. relevant communication(s) from interested parties, including complaints;* *g. opportunities for continual improvement.*	GBP-ENV-11 Form 27002, EMS Annual Management Review Meeting Agenda
The outputs of the management review shall include: • *conclusions on the continuing suitability, adequacy and effectiveness of the environmental management system;* • *decisions related to continual improvement opportunities;* • *decisions related to any need for changes to the environmental management system, including resources;* • *actions, if needed, when environmental objectives have not been achieved;* • *opportunities to improve integration of the environmental management system with other business processes, if needed;* • *any implications for the strategic direction of the organization.*	GBP-ENV-11 Form 27002

The organization shall retain documented information as evidence of the results of management review.	GBP-ENV-11

9.19 Improvement

GBP-CAP-01 describes the Energy Northwest process used at all facilities to manage actionable issues that are not governed under 10 CFR 50, Appendix B, Criterion 16 or 10 CFR 72, Subpart G required Corrective Action Program for the Columbia Generating Station operating license. For actionable issues that are governed by the above criterion for Columbia SWP-CAP-01, Corrective Action Program is followed; GBP-CAP-01 does not apply. These issues are also categorized as Conditions Adverse to Quality (CAQ) or Significant Conditions Adverse to Quality (SCAQ). The details for processing AR-CRs categorized as CAQ/SCAQ are described in SWP-CAP-01 and associated SWP-CAP series documents. AR-CRs written for EMS non-conformities are generally not categorized as CAQ/SCAQ and therefore are subject to GBP-CAP-01.

Anyone (including contractors) can initiate an AR-CR (Condition Report). AR-CRs are reviewed by the Condition
Review Group, which includes staff from the Corrective Action Program, Operations, Maintenance and Engineering, for review and a determination of categorization and the level of disposition. Categorization determines whether the AR-CR is dispositioned in accordance with SWP-CAP-01 or GBP-CAP-01. Columbia management determines the appropriate level of cause analysis for CAQ/SCAQ AR-CRs using guidance contained in CDM-01, Cause Determination Manual, and led by staff with appropriate training qualifications. Cause analysis for AR-CRs governed by GBP-CAP-01 is at the discretion of the department manager owning the condition. To ensure compliance with ISO 14001:2015 clause 10.2, E&RP regularly screens the CR package to identify EMS-related nonconformities and documents the cause in the CR. RPI-29.0, Environmental Compliance Assessments, documents the process in reviewing AR-CRs.

Cause determinations, corrective / preventive actions, and effectiveness determinations of corrective actions for AR-CRs are tracked in the Action Tracking System.

EMS REQUIREMENT	**RELEVANT PROCEDURES, ETC.**
General (clause 10.1)	
The organization shall determine opportunities for improvement…	GBP-ENV-09 GBP-ENV-13 GBP-ENV-15
Nonconformity and corrective actions (clause 10.2)	

When a nonconformity occurs, the organization shall: *a. react to the nonconformity and, as applicable:* *1. take action to control and correct it;* *2. deal with the consequences, including mitigation adverse environmental impacts;* *b. evaluate the need for action to eliminate the causes of the nonconformity, in order that it does not recur or occur elsewhere, by:* *1. reviewing the nonconformity;* *2. determining the cause of the nonconformity;* *3. determining if similar nonconformities exist, or could potentially occur;* *c. implement any action needed;* *d. review the effectiveness of any corrective action taken;* *e. make changes to the environmental management system, if necessary.*	GBP-CAP-01 or SWP-CAP, Corrective Action Program series (for CAQ/SCAQ issues), as appropriate. GBP-ENV-13 requires cause determination if environmental objectives will not achieve their intended target. RPI-29.0 requires cause determination on all EMS related compliance obligation nonconformities. GBP-CAP-01 or SWP-CAP, Corrective Action Program series (for CAQ/SCAQ issues), as appropriate, provide for corrective action effectiveness reviews.
Corrective actions shall be appropriate to the significance of the effects of the nonconformities...	GBP-CAP-01 or SWP-CAP, Corrective Action Program series (for CAQ/SCAQ issues), as appropriate, provide requirements for implementing actions appropriate to the problem.
The organization shall retain documented information... • *the nature of the nonconformities…* • *the results of any corrective actions.*	GBP-CAP-01 or SWP-CAP, Corrective Action Program series (for CAQ/SCAQ issues), as appropriate, provide for documenting actions taken.
Continual improvement (clause 10.3)	
The organization shall continually improve the suitability, adequacy and effectiveness of the environmental management system to enhance environmental performance.	PSM-5.7 commits Energy Northwest to continually improve the EMS.

10.0 REFERENCES

10.1 Policy Statements Manual (PSM)

- PSM-5.7, Energy Northwest Environmental Stewardship Policy
- PSM-6.11, Training - Qualifications

10.2 General Business Procedure (GBP) for all Projects

- GBP-AM-02, Energy Northwest Strategic and Business (Excellence) Planning
- GBP-ASU-02, EMS Audit
- GBP-CAP-01, Non-Regulatory Action Program
- GBP-COM-01, Preparation of Documents for Submittal to Energy Northwest Governing Boards
- GBP-COM-02, Developing Content for Communications Tools
- GBP-COM-06, Chief Executive Officer Event Notification
- GBP-COM-07, Change Management Process
- GBP-DOC-01, Document Control
- GBP-DOC-03, Controlled Form Creation, Revision, and Cancellation
- GBP-ENV-02, Noxious Weed Control Program
- GBP-ENV-03, Compliance with the State Environmental Policy Act (SEPA)
- GBP-ENV-04, Managing Regulated Waste
- GBP-ENV-05, Chemical Management
- GBP-ENV-06, Water Resources and Liquid Effluents
- GBP-ENV-07, Air Quality
- GBP-ENV-08, Resource Protection
- GBP-ENV-09, Environmental Aspects Identification
- GBP-ENV-10, Environmental Management System Communications
- GBP-ENV-11, Environmental Management Review
- GBP-ENV-13, Environmental Performance Measurement
- GBP-ENV-14, Work Planning and Control for Environmental Aspects
- GBP-ENV-15, Pollution Prevention Program Description
- GBP-ENV-17, Managing Regulated Waste at Columbia Generating Station
- GBP-ENV-18, Oil and Hazardous Substances Spill Prevention, Control, and Counter-Measure Plan
- GBP-EPP-01, Non-Nuclear Emergency Plan
- GBP-EPP-02, Environmental Emergency Preparedness
- GBP-ERM-03, Enterprise Risk Management Program
- GBP-HR-14, Employee Recognition and Awards
- GBP-HR-18, Performance Improvement
- GBP-HR-20, Performance Appraisals
- GBP-PRO-01, Manual Control
- GBP-PUR-02, Procurement
- GBP-REC-02, Department Management of Record
- GBP-REC-03, Public Records Requests
- GBP-REG-01, Regulatory Requirements Review

10.3 Site-Wide Procedures (SWP) for Columbia

- SWP-ASU-01, Evaluation of Programs, Processes and Suppliers
- SWP-ASU-02, Self-Assessment and Benchmark Process
- SWP-CAP-01, Corrective Action Program
- SWP-CAP-05, Corrective Action Review Board (Carb)
- SWP-CAP-06, Condition Report Review

- SWP-CAP-07, Trending Program
- SWP-CAP-08, Stop Work Authority
- SWP-CHE-02, Chemical Process Management and Control
- SWP-CHE-05, Chemical Management Program
- SWP-DOC-01, Document Control
- SWP-ENV-01, Refrigerant Management Program
- SWP-ENV-04, Cultural Resource Protection Program
- SWP-ENV-05, Wildlife Response Program
- SWP-EPP-01, Emergency Response Organization and Training
- SWP-MAI-01, Work Management Process Overview
- SWP-ORG-01, Organizational Changes
- SWP-OSH-06, Asbestos Operations and Maintenance Program
- SWP-PRO-01, Procedure and Work Instruction Use and Adherence
- SWP-PRO-02, Preparation, Review, Approval, and Distribution of Procedures
- SWP-PRO-03, Writer's Manual
- SWP-PRO-04, Procedure Program – Including Procedures, Instructions, Forms and Manuals
- SWP-PUR-01, Procurement of Services
- SWP-PUR-04, Material, Equipment, Parts and Supplies Procurement
- SWP-REC-02, Department Management of Quality Assurance Records
- SWP-RMP-02, Radioactive Waste Process Control Program
- SWP-RMP-03, Hazardous Materials Transportation Security Plan
- SWP-RPP-01, Radiation Protection Program

10.4 Organization Level Procedures (Not all inclusive - these are examples or procedures specifically referenced in this EMS Manual, as applicable to the referenced Project)

- ABN-HAZMAT, Hazardous Materials Spills/Releases
- Nine Canyon Wind Project Avian and Bat Incidental Monitoring
- CI-9.1, Chemical Hygiene Plan
- FCEI-3.1.3, Columbia Generating Station Site and Facility Weed Control
- FCEI-1.1.15, Facilities and Commercial Engineering Hazardous Substance Spill Prevention, Preparedness and Countermeasures
- FCEI-1.1.17, Chemical/Regulated Waste Management for Electricians
- FCEI-1.1.18, Chemical/Regulated Waste Management for Technicians
- FCEI-1.1.19, Chemical/Regulated Waste Management for Paints and Coatings
- FCEI-1.1.20, Chemical/Regulated Waste Management for Vehicle Maintenance
- FCEI-2.1.8, Engineering Guidelines for Work Planning, Documentation, and Closure
- FCEI-3.1.10, Environmental Management in the Work Planning Process
- FCEI-3.1.13, Control of the Equipment and Material Storage and Waste Recycling Areas
- FCEI-3.1.11, Operation of the CGS Inert Waste Landfill
- DES-2-1, Plant Design Changes
- DES-2-7, Minor Plant Design Changes
- PJM-2-1, Project Teams
- Desk Procedure, Data Entry for Environmental Management System Public Inquiry Log
- Volume 13, Emergency Plan Implementing Procedures (EPIPs)

- RPI-8.0, Processing of Regulatory and Industry Correspondence
- RPI-12.0, Review and Management of Legal and Other Requirements
- RPI-25.0, Waste Shipping Procedure
- RPI-26.0, Waste Designation
- RPI-29.0, Environmental Compliance Assessments
- GEN-TQS-01, Training Program Administration
- SOP 11.11, Columbia Generating Station Groundwater Monitoring Program, Standard Operating Procedure
- SOP-CW-OPS, Circulating Water and Cooling Towers Operations
- SOP-CW-CHEM, Circulating Water and Cooling Towers Chemistry
- IDWI 7.05, Hazardous Material and Chemical Management (IDC) - provides requirements for hazardous material and waste management
- Packwood Lake Hydroelectric Project Regulated Waste Management Instructions - provides regulated waste management requirements.
- APEL 9.0, Waste Management Policy - provides requirements for hazardous waste management.

10.5 Plant Procedures Manual (PPM) for Columbia

- PPM 1.3.1, Operating Policies, Programs and Practices
- PPM 1.3.10, Plant Fire Protection Program Implementation
- PPM 1.3.56, Conduct of Maintenance
- PPM 1.3.58, Conduct of Chemistry
- PPM 1.3.68, Work Management Process
- PPM 1.3.76, Integrated Risk Management
- PPM 1.4.7, Control of Supplemental Personnel
- PPM 1.10.1, Notifications and Reportable Events
- PPM 1.11.1, Radiological Environmental Monitoring Program (REMP) Implementation Procedure
- PPM 1.14.5, NPDES Permit Compliance
- PPM 10.2.32, Soil Excavation, Backfill and Compaction
- PPM 12.2.9, Circulating and Plant Service Water Halogenation Surveillance
- PPM 12.14.1, Chemical Treatment of Standby Service Water
- PPM 12.14.3, Circulating Water - Corrosion Inhibitor Addition
- PPM 16.9.1, Plant Blowdown Discharge Line Flow Rate - CC
- PPM 17.1.1, Sampling of Hazardous Substances
- PPM 17.1.2, Regulated Waste and Chemical Product Management at 437' Radwaste

10.6 Manuals, Program Plans and Guides as applicable to the referenced Project

- EMS-01, Environmental Management System Program Description (this document)
- EP-01, Emergency Plan Columbia Generating Station
- EPI-21, Drill and Exercise Development and Implementation
- Asset Suite Planners Guide
- Credit Card User's Guide

- CDM-01, Cause Determination Manual
- User's Guide to Contracting
- Packwood Lake Hydroelectric Project Emergency Instructions
- Industrial Safety Procedures Manual (ISPM)
- Columbia Inert Landfill Plan of Operation
- Columbia Inert Landfill Post-Closure Plan
- IDC Inert Landfill Plan of Operation
- IDC Inert Landfill Closure Plan
- NPDES-01, Columbia Generating Station NPDES Operations And Maintenance Plan

10.7 Other for all Projects

- Contractor Brochure
- EMS and You Brochure
- General Provisions for Consultant and Technical Services
- General Provisions for Purchase Orders
- Invitation for Bid
- ISO 14001:2015, Environmental Management Systems - Specifications with Guidance for Use
-
- OER INPO SOER 07.2, Intake Cooling Water Blockage {AR 176583}
- Washington State Department of Ecology Publication 97-401, February 1997, "Environmental Management System (EMS) Alternative to Pollution Prevention Planning"

11.0 ATTACHMENTS

11.1 EMS ROLES, RESPONSIBILITIES AND AUTHORITIES

As indicated in the Environmental Stewardship Policy, everyone at Energy Northwest has a role to play in the EMS. This section defines the roles and responsibilities associated with EMS development and implementation. Roles and responsibilities associated with maintenance and continual improvement of the EMS (and with specific positions, such as the manager of E&RP, other supervisory positions, subject matter experts, etc.) should be evaluated and further defined during annual EMS reviews.

Roles described below include:

- Chief Executive Officer
- Executive Board
- Vice Presidents
- General Counsel
- E&RP Manager / EMS Management Representative
- Line Organizations
- Support Organizations
- EMS Representatives
- EMS Coordinator
- Employees
- Contractors

CHIEF EXECUTIVE OFFICER (CEO)

The CEO should be knowledgeable and committed to successful implementation of the EMS. The CEO's responsibilities include:

- Expressing Energy Northwest's commitment to the environment by developing and issuing the environmental policy.
- Developing (with input from staff) overall organizational environmental stewardship goals and priorities.
- Providing adequate financial resources for the development and implementation of the EMS, or requiring that these resources be planned for and requested.
- Clearly identifying expectations and incorporating EMS requirements and environmental performance in the evaluation criteria for organizational units and senior managers, as appropriate.
- Considering potential environmental impacts of past, present, and future operations, in decision-making, to ensure that overall organizational activities and plans are in line with the environmental policy.
- Periodically formally reviewing EMS progress, performance data, and the EMS itself to ensure continued suitability, adequacy, and effectiveness of the EMS, and ensuring that resources are provided for improvement as necessary.
- Communicating with external stakeholders on Energy Northwest's environmental goals, priorities, and policy commitments.

EXECUTIVE BOARD

The Executive Board also needs to be aware and supportive of the EMS. Their responsibilities include:

- Periodically reviewing environmental performance of Energy Northwest.
- Considering the commitments in the environmental policy and potential environmental impacts of past, present, and future operations in decision-making.

VICE PRESIDENTS AND GENERAL MANAGER

Vice Presidents and General Manager are responsible for the implementation and integration of the EMS within their organizations. In general, their responsibilities include:

- Issuing supportive communication and guidance on the EMS
- Implementation within their organization.
- Assigning sufficient resources to implement, maintain, and improve the EMS by integrating applicable requirements into activities across their organization.
- Clearly identifying expectations and incorporating EMS requirements and environmental performance into the evaluation criteria for organizational units and staff, as appropriate.
- Ensuring design, development, modification, and improvement of existing programs and procedures that they manage in order to support the applicable requirements of the EMS and conformance to the composite EMS model.
- Ensuring the implementation, maintenance, and improvement of the EMS within their own organization including integrating applicable requirements into the activities, products and services with significant environmental aspects across their organization.
- Ensuring the collection of environmental performance and project controls information for their organization and reporting this information to the EMS Management Representative.
- Ensuring establishment and achievement of Energy Northwest environmental objectives and targets related to their activities.
- Considering the commitments in the environmental policy, and potential environmental impacts of past, present, and future operations in decision-making.

GENERAL COUNSEL

The General Counsel is the senior management sponsor for the EMS and is ultimately responsible for EMS program implementation and maintenance of its infrastructure, including:

- Accountability to the chief executive officer for ensuring that the environmental policy is implemented and the EMS is maintained.
- Providing oversight, guidance and assistance, including the assignment of sufficient resources, to the EMS to ensure project objectives are accomplished.
- Issuing communication and information on the EMS development and implementation.

EMS MANAGEMENT REPRESENTATIVE

The Manager, E&RP, is the EMS Management Representative and is ultimately responsible for EMS implementation and maintenance, including:

- Reporting to CEO and senior management on the overall performance of the EMS, environmental performance, project progress, and making recommendations for enhancements.
- Reporting periodically to the Executive Board as directed by management.
- Delegated authority for the budget funding Energy Northwest EMS.

LINE ORGANIZATIONS

The management and staff of the line organizations are responsible for ensuring that the EMS is effectively integrated into their operations, including:

- Implementing, maintaining and improving the EMS within their organization in alignment with the corporate EMS, including developing and implementing specific, assigned, and tracked actions in support of the Environmental Excellence Plan.
- Appointing employees as EMS Representatives responsible for assuring the EMS is effectively and efficiently integrated into their organizations.
- Supporting their EMS Representatives and ensuring they have the time, resources, and authority to make decisions for their organization.
- Through their EMS Representative, participating in EMS project planning and coordination meetings, and providing input to the EMS program.
- Teaming with the EMS Coordinator and their EMS Representative to integrate EMS requirements into their organization activities, services, and products.
- Implementing pollution prevention opportunities and preventing environmental impacts from their activities.

SUPPORT ORGANIZATIONS

E&RP has key environmental management responsibilities. Facilities and Commercial Engineering, Construction and Project Management, the Chemistry Department, and Maintenance also have significant responsibilities in the environmental arena for Columbia. The APEL and IDC also have staff that provide varying degrees of oversight on environmental issues with support from E&RP for their respective Projects.

A number of support organizations own programs or systems (e.g., Training, Quality, etc.) that are closely intertwined with and critical to the EMS. The management and staff of these support organizations are responsible for ensuring that the EMS is effectively integrated into their programs/systems, including:

- Assigning sufficient resources and teaming with the EMS Coordinator to implement, maintain, and improve the EMS by integrating applicable requirements into activities across their organizations. This may include developing/modifying/enhancing systems, procedures, plans, programs, and operations to conform to the requirements of the composite EMS model, and

committing to specific, assigned, and tracked actions in support of the Environmental Excellence Plan.

- Supporting their EMS Representatives and ensuring they have the time, resources, and authority to make decisions for their organization.
- Through their EMS Representative, participating in EMS project planning and coordination meetings, and providing input to the EMS program.

Specific environmental responsibilities for key organizations are described below.

- Records and Information Management (Legal & Compliance Services) - Developing, enhancing, and modifying the supporting systems used to identify, control, manage, retain, and disposition environmental documents and records in accordance with the composite EMS model.
- Maintenance (Nuclear Generation) - Hazardous waste management and refrigerant management for Columbia.
- Chemistry (Nuclear Generation) – Owning the Chemical Management Program at Columbia. Developing, enhancing, and modifying the chemical control program for application at Columbia. Applying the pollution prevention hierarchy to chemical management, and maintaining the National Pollutant Discharge Elimination System (NPDES) permit compliance for Columbia.
- Public Affairs (CEO) - Coordinating communication with internal and external stakeholders on the EMS, environmental issues, and performance, as well as maintaining records of the receipt and responses to communications from external interested parties.
- Facilities & Commercial Engineering (Energy Services and Development) - Solid waste management, hazardous waste management, pesticide application, and refrigerant management for all Projects.
- Regulatory Affairs & Performance Improvement (Nuclear Generation) - Responsible for developing and providing high quality, cost-effective leadership, employee and organization development services. Includes Industrial Safety, which owns the Hazard Communication Program.
- Corrective Action Program (Nuclear Generation) - Assisting in the development and analysis of nonconformance reporting, corrective action, and preventive action planning processes.
- Emergency Preparedness (Nuclear Generation) - Ensuring that emergency preparedness and response procedures and plans meet the requirements of the composite EMS model, including making necessary modifications to procedures and programs, and conducting drills.
- Environmental and Regulatory Programs (Legal & Compliance Services) – Provides corporate level guidance on management of environmental programs and oversight of EN organizations' conformance to environmental regulatory requirements, EMS standards, and voluntary commitments. Coordinates hazardous waste management, chemical management, and pollution prevention planning. Develops procedures for identifying, monitoring and analyzing environmental requirements and for compliance assurance. Has the lead for securing environmental permits and licenses and interfacing with the regulators. Provides support for any needed modification to monitoring and measurement procedures needed to conform to the composite EMS model. Provides programmatic management of the EMS and implements an Environmental Excellence Plan.
- Environmental Services (Energy Services & Development) - Performs such services as chemical hygiene, environmental sampling, laboratory analysis, and sanitary wastewater

treatment system operation. Environmental monitoring programs (radiological and terrestrial programs) are also conducted by the Environmental Services group.

- Finance (CFO) - Assisting with the integration of the requirements in the EMS model for objectives, targets, and feedback from the management review process into planning processes. Ensuring that the planning process considers resources needed for EMS development, implementation and maintenance.
- Human Resources (Corporate Services) - Incorporating EMS model requirements for documenting roles, responsibilities, accountabilities, and authorities into position descriptions, performance appraisals, and recognition or disciplinary processes. Teaming with the EMS Coordinator to develop/enhance employee involvement programs.
- Maintenance Work Planning (Nuclear Generation); Construction & Project Management (Nuclear Generation); Facilities & Commercial Engineering (Energy Services and Development) - Developing a work planning process that considers requirements and environmental hazards and ensuring that necessary and sufficient operational controls (both administrative and engineered) are put into place for Columbia.
- O&M/Professional Services (Energy Services and Development) - Ensuring a graded incorporation of EMS model requirements into all operating electrical generation projects other than Columbia Generating Station (e.g., Nine Canyon, Packwood)
- Supply Chain Services (Corporate Services) - Incorporating EMS model requirements applicable to contractors and suppliers of goods and services into procurement procedures and programs.
- Quality Services (Nuclear Generation) - Assisting in the incorporation of EMS auditing, compliance assurance, and management review requirements from the composite EMS model into existing self-assessment and/or auditing programs/procedures.
- Training (Nuclear Generation) - Developing/modifying the training program infrastructure to support the identification, delivery, and tracking of environmental training and qualification requirements for managers, employees, and contractors.

EMS REPRESENTATIVES

As the lead for implementation of the EMS within their organizations, the EMS Representatives are responsible for ensuring the EMS is integrated into their organizations' activities effectively and efficiently. Depending on the activities, the organization may have its own EMS Representative, may share an EMS Representative with a similar organization, or may just have a point of contact to provide or receive input. EMS Representatives are listed on the EN EMS website.

EMS representatives are specifically responsible for:

- Serving as a communication link for EMS information between their line organizations, other EMS Representatives and the following:
  - Public Affairs
  - EMS Coordinator – E&RP
  - EMS Management Representative – Manager, E&RP

  Related requirement: GBP-ENV-10 (Environmental Management System Communications)

- Leading, coordinating, and facilitating the effective implementation and maintenance of the EMS within their assigned organizations according to the EMS technical program

requirements. This includes development of action plans and goals specific to their organizations' environmental objectives, targets and performance indicators.

- Periodically collecting and reporting information on EMS maintenance (including status, issues and corrective actions) and environmental performance within their assigned organizations to their senior management and the EMS Coordinator.
  Related requirement: GBP-ENV-13 (Environmental Performance Measurement)

- Supporting the performance of self-assessments for activities led by E&RP in their organizations associated with environmental regulatory compliance and voluntary commitments (identified in Regulatory Program Instruction - RPI-12.0).
  Related requirement: RPI-29.0 (Environmental Compliance Assessments)

- Assisting and coordinating the identification and implementation of pollution prevention opportunities for activities within their assigned organizations.
  Related requirement: GBP-ENV-15 (Pollution Prevention Program Description)

- Performing annual reviews of activities within their assigned organizations and updating associated environmental aspects if required.
  Related requirement: GBP-ENV-09 (Environmental Aspects Identification)

- Attending periodic EMS Representative Meetings chaired by the EMS Coordinator.

- Assisting, as needed, with internal EMS audits and external ISO 14001 registration and surveillance audits.
  Related requirement: GBP-ASU-02 (EMS Audit)

EMS COORDINATOR

The EMS Coordinator is responsible for the day-to-day coordination and implementation of the EMS, including:

- Chairing and managing the EMS Representatives committee.
- Providing technical assistance to line and support organizations and facilitating implementation of the EMS throughout Energy Northwest.
- Proposal of environmental objectives and targets implemented in the Environmental Excellence Plan.
- Periodically compiling information on EMS implementation progress (including status, issues and corrective actions) and environmental performance.
- Assisting the EMS Management Representative with coordination of the EMS management review.
- Arranging for, coordinating, and supporting EMS audits, including ISO 14001 registration/surveillance audits and maintenance of EMS registration status.
- Tracking closure of EMS audit findings, and raising concerns or issues with management as necessary.

EMPLOYEES

All employees within Energy Northwest have a role to play in the EMS (including those described in GBP-HR-18, Performance Improvement), including:

- Being aware of the Energy Northwest environmental stewardship policy.
- Following all environmental requirements of the EMS that are applicable to their work.
- Understanding their roles and responsibilities in the EMS, including emergency preparedness and response requirements.
- Understanding how their actions may impact (positively or negatively) the environment and considering the environment when making decisions.
- Proactively working to improve the environmental performance of Energy Northwest within their own areas of responsibility, including suggesting ways to reduce waste and conserve resources, and participating in corporate pollution prevention and recycling programs.

CONTRACTORS

All contractors working for or on behalf of Energy Northwest whose work can have a significant negative impact on the environment, have a role to play in the EMS, including:

- Being aware of the Energy Northwest environmental stewardship policy.
- Following all environmental requirements of the EMS that are applicable to their work.
- Understanding their roles and responsibilities in the EMS, including emergency preparedness and response requirements.
- Understanding how their actions may impact (positively or negatively) the environment and considering the environment when making decisions.

END

11.2 OPERATIONAL CONTROL/ENVIRONMENTAL MANAGEMENT PROGRAMS

As discussed under the EMS element Environmental Aspects, Energy Northwest has identified the following significant environmental aspects. Programs/operational controls in place to manage these aspects are described below. There is also an environmental monitoring program that covers a variety of aspects.

- Air emissions (see Air Emissions, Asbestos, and Refrigerants)
- Liquid effluents (see Industrial Wastewater, Sanitary Wastewater)
- Storage and use of hazardous materials (see Chemical Control, Community Right-to-Know, PCBs, Emergency Spill Preparedness and Response, and Pollution Prevention)
- Waste generation (see Solid Waste, Hazardous [Dangerous] Waste, Mixed Waste, Radioactive Waste and Pollution Prevention)
- Land use (see Land Use)
- Community outreach
- Generation of carbon-free energy

AIR EMISSIONS, ASBESTOS, AND REFRIGERANTS (Aspects: Air Emissions, Waste Generation)

Auxiliary boiler and diesel engine exhausts at Columbia are covered by the SCA and EFSEC Order No. 873. The Order limits and requires reporting of annual run time for the diesel engines and annual fuel consumption for the auxiliary boiler. Annual source re-registration for Columbia is also required in accordance with Washington Administrative Code (WAC) 463-78. Air emissions from the Columbia paint/blast shop are covered by EFSEC Order No. 837. Radioactive air emissions from Columbia are covered by EFSEC Order No. 874 (evaporation ponds) and EFSEC Order No. 875 (decommission Outfall 002 stormwater channel and pond).

Maintenance activities occasionally involve the removal of asbestos material. As may be required by the anticipated scope, EN Industrial Safety or contractors provide notifications to the Benton Clean Air Agency (BCAA). Except for disposal issues, these activities are viewed more from a personnel safety perspective than from an environmental perspective. Procedure SWP-OSH-06, Asbestos Operations and Maintenance Program, describes the specific requirements for maintenance activities at Columbia.

Ozone depleting refrigerants are addressed through the refrigeration management program. Mechanics in Columbia Maintenance and Facilities & Commercial Engineering that work on refrigeration equipment are certified to the appropriate level. Refrigeration Technicians and their Craft Supervisor maintain accurate inventories of equipment and refrigerant stocks and maintain records of leak rates and repairs. Refrigerant storage is consolidated in Building No. 72 (coordinates N10400, W0450). Procedure SWP-ENV-01, Refrigerant Management Program, describes the programmatic controls.

INDUSTRIAL WASTEWATER (Aspect: Liquid Effluents)

Discharges from Columbia Generating Station are controlled by the station's NPDES permit (No. WA-002515-1). The permit was renewed by EFSEC for a five-year term on September 30, 2014.

1. Outfall 001 (coordinates N12080, E16520) is in the Columbia River at river mile 351. Cooling water blow down averaging about two million gallons/day is discharged at this location. The permit specifies limits for total zinc, and chromium, total residual halogen (chlorine and bromine), flow, pH, and acute toxicity.

Plant Operations has primary responsibility for assuring compliance with the Columbia NPDES permit. Plant Chemistry oversees the chemical additions. Plant procedures related to permit compliance include:

SOP-CW-OPS	Circulating Water and Cooling Towers Operations
SOP-CW-CHEM	Circulating Water and Cooling Towers Chemistry
PPM 1.14.5	NPDES Permit Compliance - identifies requirements and assigns responsibilities
PPM 1.10.1	Notifications and Reportable Events - identifies non-routine reporting requirements
SWP-CHE-02	Chemical Process Management and Control - identifies NPDES permit effluent limitations
PPM 12.2.9	Circulating and Plant Service Water Halogenation Surveillance - includes blow down approval sequence
PPM 12.14.3	Circulating Water - Corrosion Inhibitor Addition - identifies pH limits re: corrosion control
PPM 16.9.1	PLANT BLOWDOWN DISCHARGE LINE FLOW RATE – CFT/cc – provides calibration instructions for flow rate monitor CBD-FT-10.

Environmental Services sample and analyze the circulating water (CW) for copper and other parameters monthly per the monitoring requirements for Outfall 001. Environmental Services also conducts special studies required by the NPDES permit. Environmental Services compiles the routine discharge monitoring reports and provides them to E&RP for plant management signature. The Environmental Services laboratory is accredited (per WAC 173-50) by the Washington Department of Ecology (WDOE).

E&RP takes the lead in preparing environmental permit applications and all non-routine submittals (e.g., noncompliance reports, study plans). E&RP also provides the primary interface with regulators.

Energy Northwest also holds an industrial wastewater discharge permit for APEL. Permit conditions relative to submittal of plans for solid waste management and spill preparedness are in effect. The Industrial Wastewater Discharge Permit (CR-IU006) issued to APEL by the City of Richland has been in effect since March 1998. The permit specifies monitoring requirements and effluent limitations.

SANITARY WASTEWATER (Aspect: Liquid Effluents)

Sanitary wastes from Columbia, IDC, and the support facilities are piped to a sanitary waste treatment facility (SWTF) that uses aeration lagoons and facultative stabilization ponds. This wastewater treatment facility is located about 1/2 mile southeast of Columbia. Influent averages about 20,000 gallons per day (gpd), with the higher flows being coincident with the maintenance and refueling

outages at Columbia. When the stabilization ponds are full, treated wastewater is discharged to percolation beds. These discharges are made one or two times per year in accordance with the conditions of an EFSEC resolution (No. 300, September 2001) that prescribes the discharge limits and the monitoring and reporting requirements.

The SWTF is operated by a certified operator in the Environmental Services department. Most of the wastewater analyses are performed by Environmental Services. Environmental Services also compiles the monthly monitoring reports for E&RP to submit to EFSEC on a quarterly basis.

CHEMICAL MANAGEMENT (Aspect: Hazardous materials use and storage)

GBP-ENV-05 establishes the requirements for implementing all aspects of chemical management at all Energy Northwest business unit sites and projects. GBP-ENV-05 provides requirements for the evaluation, procurement, receipt, storage, use and disposal of non-radioactive chemical materials. SWP-CHE-05 establishes further requirements for implementing all aspects of chemical management at Columbia. These aspects include chemical material procurement, receipt, warehousing, labeling, distribution, storage, periodic inspection and review, and transition into waste management. Duties and responsibilities for new chemical authorization, chemical material access into critical areas, and the labeling requirements extending to all Columbia areas is covered in SWP-CHE-05.

E&RP provides corporate level programmatic guidance and oversight for the Chemical Management program. Implementation of chemical management at Columbia is managed by the Chemistry Department.

Chemical Management at other Business Units and Projects is specified by the Energy Services and Development business sector manager or their assigned delegate in accordance with GBP-ENV-05.

COMMUNITY-RIGHT-TO-KNOW (Aspect: Hazardous materials use and storage)

Hazardous materials inventories (Emergency Planning and Community Right-To-Know Act, Tier II Reports) are prepared by staff at reportable facilities each year for submittal to state and local authorities by March 1. Submittal is coordinated by E&RP.

POLYCHLORINATED BIPHENYLS (PCBS) (Aspects: Hazardous materials use and storage, Waste generation)

To reduce exposure to PCB issues, EN undertook a transformer retro-fill program at Columbia in 1988. When the project was completed in 1994, the station had converted four PCB-contaminated (mineral oil) transformers and eleven (11) PCB (Askarel) transformers to non-PCB (<50 PPM). The last PCB or PCB-contaminated transformer at the site, a small 10-kVA neutral grounding transformer on the High Pressure Core Spray diesel generator, was removed in August 2001. The only PCB materials regulated under 40 CFR Part 761 remaining onsite are in lighting ballasts and capacitors. Energy Northwest disposes of non-leaking small PCB capacitors and light ballasts in regulated hazardous waste landfills.

EMERGENCY AND SPILL PREPAREDNESS AND RESPONSE (Aspects: Hazardous materials use and storage, waste generation)

The Control Room is established as a focal point for reporting spills at Columbia Generating Station. The Shift Manager/Control Room Supervisor serves as the on-duty emergency coordinator. The primary initial responders for emergency situations are the Plant Fire Brigade members, with backup from the Hanford HAZMAT Team. E&RP provides direction for recovery, cleanup and disposal of spill residues. Initial external reports are by the Control Room or E&RP. Follow-up reports that may be required by regulators are submitted through E&RP.

Columbia Generating Station has an Emergency Preparedness and Response program, as required to maintain compliance with requirements for operating a nuclear power plant. EN has procedures for emergency preparedness and response, and has held drills. The spill plan (GBP-ENV-18) is referenced in the Dangerous Waste Contingency Plan. This is supplemented by the Corrective Action Program (GBP-CAP-01), which documents any accident or emergency event and ensures corrective and preventive actions are taken. Procedures relevant to spill response are:

GBP-ENV-18	Oil and Hazardous Substances Spill Prevention, Control, and Counter-Measure Plan - this is the principal guidance for spill response
PPM 1.10.1	Notification and Reportable Events - catalogues event-related reports such as for spills and unauthorized releases.
ABN-HAZMAT	Hazardous Materials Spills/Releases - provides operators with quick guidance for immediate actions.

Emergency preparedness and response procedures have been reviewed and revised after drills, and lessons learned have been incorporated.

GBP-EPP-02 describes planning for and response to industrial emergencies and natural disasters at Energy Northwest facilities. These facilities also have spill prevention, control and countermeasure plans.

Packwood Lake Hydroelectric Project's Emergency Plan covers environmentally related emergency situations such as storm water pollution, forest fire, oil, fuel and hazardous material spills, meteorological, equipment failure, and geological events, as well as plant and equipment fires, safety and first aid emergencies, and man-made emergencies such as bomb threats.

SOLID WASTE DISPOSAL (Aspect: Waste Generation)

Most solid wastes[1] generated at EN facilities on the Hanford Site and in North Richland are collected and taken to the City of Richland municipal landfill by EN Facilities & Commercial Engineering (F&CE) personnel. The exception is the inert wastes (e.g., cured concrete, asphaltic materials) that are disposed onsite at either Columbia or WNP-1/4. These wastes are managed in accordance with WAC 173-350 Solid Waste Handling Standards. The NPDES permit for Columbia requires the submittal of a Solid Waste Control Plan that describes how solid wastes are managed.

[1]The term solid waste in this discussion refers to non-liquid wastes that are not dangerous wastes.

The landfill at Columbia is located in a borrow pit southwest of the cooling towers and was opened in about 1974. Burial of construction and demolition related waste material commenced in 1976. Between the early 1980's and early 1990's other facility-generated waste was also buried in the landfill. The landfill was the subject of a RCRA investigation in 1995 that identified low levels of organic solvents in the groundwater. A five-acre parcel was subsequently closed and capped in April/May 1999. This section of the landfill is inspected quarterly in accordance with the Columbia Generating Station (CGS) Landfill Post-Closure Plan. A small area on the west side of the closed landfill is open to receive inert waste material. A certified landfill operator assigned by E&RP and F&CE operates the landfill in accordance with the CGS Landfill Plan of Operation.

Another active landfill for inert waste is located on the WNP-4 property. This eight-acre landfill was first opened in 1982. Only wastes from the WNP-1/4 site are buried there. A special disposal activity that started in late 2000 is the burial of almost 30,000 cubic yards of asbestos cement material from six cooling towers. Approval to dispose of this waste onsite was granted by EFSEC in March 2000 through revisions to the Industrial Development Complex Landfill Plan of Operation. No environmental monitoring is required or conducted at the landfill. Industrial Development personnel are responsible for operating the landfill; however, this function has been delegated to E&RP. Brief annual reports on the disposal activity at both Columbia and WNP-1/4 landfills are submitted to EFSEC by E&RP in accordance with the landfill Plan of Operation and WAC 173-350-410. Closure activities will be governed by the IDC Inert Landfill Closure Plan.

HAZARDOUS (DANGEROUS) WASTE (Aspect: Waste Generation)

EN has a hazardous waste generator ID number for Columbia (WAD980738488). WNP-1 at IDC (WAD061666103), Packwood (WAH000019299), and Nine Canyon (WAH000033834) ID numbers are in inactive status. The Richland office complex (WAD981767460) and APEL (WAH000004507) ID numbers were placed in inactive status in late 1997 and 2007, respectively.

Current operations include treatment by generator (corrosive waste-elementary neutralization), hazardous waste transportation (onsite only) in flatbed and enclosed trucks, hazardous and mixed waste accumulation, and operation of the inert waste landfill described above. Types of materials handled include: organics, oils, solvents, pesticides, chlorinated hydrocarbons, PCB capacitors, radioactive material, water-reactives, inorganic acids/bases, metals, empty drums, contaminated soil, contaminated water, and asbestos. The only waste storage that occurs in tanks is radiological waste; the remainder is stored in drums and other containers.

E&RP provides programmatic guidance, coordinates the hazardous waste management program at Columbia and provides expertise and oversight for other EN sites. The relevant procedures are:

- GBP-ENV-04, Managing Regulated Waste – programmatic procedure for managing regulated waste
- GBP-ENV-17, Managing Regulated Waste at Columbia - identifies requirements for waste generation, accumulation, and disposal. Includes training and contingency plans.
- PPM 17.1.1, Sampling of Hazardous Substances (Columbia) - provides methods for collecting waste and environmental samples.
- PPM 17.1.2, Chemical and Regulated Waste Management at 437' Radwaste (Columbia) - provides direction for processing wastes out of the power block.

- IDWI 7.05, Hazardous Material and Chemical Management (IDC) - provides requirements for hazardous material and waste management
- Packwood Lake Hydroelectric Project Regulated Waste Management Instructions - provides regulated waste management requirements.
- APEL 9.0, Waste Management Policy - provides requirements for hazardous waste management.

Columbia is a medium quantity generator (MQG) of hazardous (dangerous) wastes. Other Energy Northwest project sites are typically small quantity generators (SQG) but may periodically qualify as MQG. Mixed radioactive, hazardous wastes and PCB wastes are discussed in other sections herein. Recurrent waste streams (some of which are recycled) include spent batteries, mercury- and sodium-containing lamps, paint wastes, desiccants, old or out-of-specification reagents, cleaners, adhesives, coatings, and lab wastes. Non-recurrent wastes have included spill clean-up and decommissioned equipment. Other than ubiquitous wastes such as batteries, the organizations generating the preponderance of the wastes are Facilities & Commercial Engineering, and Columbia Maintenance.

Hazardous wastes are accumulated at designated satellite accumulation areas at various locations at Columbia. Wastes are moved to a 180-day accumulation area located southwest of the station (coordinates N10810, W2530). E&RP performs and documents hazardous waste designations and is responsible for management of the 180-day accumulation areas at Columbia, including inspections and arrangement of offsite shipments for disposal. For several years a vendor has provided transportation and disposal services. E&RP prepares the annual waste generator reports for Columbia.

MIXED WASTE

Columbia generates mixed (radioactive and hazardous) wastes. The designated mixed waste 180-day accumulation area is in the south central portion of the Radwaste Building at the 437' elevation.

E&RP provides oversight to the mixed waste program. Procedural guidance is in PPM 17.1.2, Chemical and Regulated Waste Management at 437' Radwaste and GBP-ENV-17, Managing Regulated Waste at Columbia Generating Station.

RADIOACTIVE WASTE (Aspect: Waste generation)

Major objectives of the Radioactive Waste Management Program for Columbia are to limit, control, minimize, and measure the production of radioactive materials in gaseous, liquid, and solid effluents. The program is implemented through approved written procedures including (for the solid waste management portion of the program) the Radioactive Waste Process Control Program (SWP-RMP-02). Controls minimize exposure to onsite personnel and plant systems and equipment and reduces external effluents in support of ALARA principles. These objectives are in accordance with applicable NRC, DOT, and WAC regulations (10 CFR 20, 10 CFR 30, 10 CFR 40, 10 CFR 50, 10 CFR 61, 10 CFR 71, 49 CFR 171 through 49 CFR 180 and WAC 246-249 and 446-50).

The Radioactive Waste Management Program is an integrated program combining the efforts of the Operations, Radiological Services, Chemistry, Engineering, Maintenance, Training, Licensing, Security, Procurement, and Quality functional areas. Responsibilities in the various functional areas are identified in SWP-ORG-01, Organizational Changes. The overall responsibility for the Radwaste

Management Program lies in the Plant Chemistry Organization. Additional responsibilities are specified for the Radiological Services, Operations, Maintenance, and Chemistry areas in SWP-RPP-01, Radioactive Waste Management Program, PPM 1.3.1, Operating Policies, Programs and Practices, PPM 1.3.56, Conduct of Maintenance, and PPM 1.3.58, Conduct of Chemistry, respectively.

POLLUTION PREVENTION (Aspect: Waste generation)

The pollution prevention (P2) program is described in GBP-ENV-15 and is coordinated by E&RP. The program addresses energy efficiency and conservation, water efficiency and conservation, waste minimization, spill prevention, and chemical management. Key program activities include developing implementation plans for the environmental stewardship objectives & targets, increasing employee awareness and communication of EMS and P2 activities, providing technical assistance on new P2 related initiatives, etc. Program activities have included expanding the recycling activities to include multiple new streams (e.g., mixed paper, cardboard, fluorescent tubes, toner cartridges, aluminum cans, batteries and more), performing multiple pollution prevention opportunity assessments, increasing internal communications, and more.

E&RP has the lead in implementing the Environmental Management System Alternative to the pollution prevention plan required by WAC 173-307. Based on historical waste generation rates, Columbia was the only EN facility required by WDOE to develop a pollution prevention plan. The first EMS Alternative plan was submitted in 2003 and approved by WDOE through a site visit. Procedural guidance is included in GBP-ENV-17. The initial Hazardous Substance Use and Waste Reduction Plan was developed in 1994 and an updated plan, covering 1998 through 2002, was submitted in September 1998. Previously, annual progress reports were prepared by Environmental Services and submitted by Regulatory Programs.

In 2003 WDOE granted EN the opportunity to utilize the EMS Alternative to P2 Planning, with the EMS Alternative plan in place, annual progress reports do not require detailed waste generation data but rather a progress report on the elements of the EMS Alternative plan.

LAND USE (Aspect: Land use)

New projects, in particular, have the potential to result in adverse environmental impacts because of land use. These potential impacts include wind and water erosion, wildlife habitat destruction, noxious weed introduction, cultural or public resource disturbance, and diminished aesthetic values. These impacts are anticipated and minimized through project planning and review. The top-tier procedural control for this planning is provided in GBP-ENV-14, Work Planning and Control for Environmental Aspects, GBP-ENV-08, Resource Protection, and SWP-ENV-04, Cultural Resource Protection Program. For significant new projects, compliance with the State Environmental Policy Act (SEPA) as outlined in GBP-ENV-03, Compliance with the State Environmental Policy Act, and its implementing rules (WAC 197-11) provide another comprehensive environmental review to identify impacts and mitigation measures.

ENVIRONMENTAL MONITORING

The Columbia Radiological Environmental Monitoring Program (REMP) evaluates the radiological impact of plant operation on the environment in the airborne, direct radiation, waterborne, and ingestion pathways as specified in EFSEC Resolution No. 332 and the Offsite Dose Calculation Manual. Samples of air, water, milk, soil, sediment, fish and garden produce are collected throughout the year and analyzed for radionuclides specific to plant operations. Radiation levels are also monitored using thermoluminescent dosimeters.

The Nine Canyon Wind Project has an ongoing Avian Monitoring Program to monitor the site for bird and bat casualties.

The Packwood Lake Hydroelectric Project has several monitoring programs that are specified in the license issued by the Federal Energy Regulatory Commission (FERC) to maintain and operate the hydropower facility. In accordance with conditions of the license, facility operations and activities are monitored for the following to identify and minimize environmental impacts:

- Lake water levels and stream flow (ramping rates)
- Vegetation and noxious weeds
- Threatened, endangered, and sensitive species
- Entrainment in project lake (fish impingement on screens)
- Stormwater
- Pipeline, surge tank, and penstock integrity

In the Project's Final License Application, the project committed to perform the following monitoring upon issuance of the new license. The new license is pending final documentation by National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA-NMFS) and issuance by FERC.

- Wetland habitat for northwestern salamander
- Amount of spawning and rearing habitat present for resident rainbow trout
- Rainbow trout population density
- Packwood lake tributary headcutting
- Raptor protection
- Compliance with Washington State's water quality standards in Packwood Lake, Lake Creek, and the tailrace area of the Cowlitz River, based on the designated use categories including criteria for total dissolved gas, pH, dissolved oxygen, fecal coliform, turbidity, and temperature.

Various environmental performance indicators are tracked via GBP-ENV-13, Environmental Performance Measurement.

END

11.3 Regulatory Agencies

- Nuclear Regulatory Commission (NRC) - As an operator of a nuclear power facility, Energy Northwest is a 10 CFR Part 50 licensee of the NRC. The focus of the NRC is public safety related to operation of the nuclear plant.

- Washington Energy Facility Site Evaluation Council (EFSEC) - EFSEC is composed of representatives of five agencies specified in Revised Code of Washington (RCW) 80.50. Its regulations are located in WAC Title 463. Compliance oversight is provided by EFSEC staff and the staff of the Departments of Health and Ecology through contracts (or inter-agency agreements) with EFSEC. All costs are paid by Energy Northwest. SCAs were developed by EFSEC and were co-signed by the Governor and Energy Northwest in the early 1970s. Issues that were not anticipated by the SCA, or that require more specificity than the SCA, are resolved through the passage of EFSEC resolutions. The SCAs provide the general conditions for plant construction and operation and, in theory, are in lieu of all other certificates, permits, and licenses that would otherwise be required by state and local agencies. In practice, the SCA does not obviate the need to acquire other permits. Compliance to SCA conditions is reviewed in quarterly meetings (audits) with the Washington Department of Ecology (WDOE) and EFSEC staff. Site restoration requirements for Nuclear Projects Nos. 1 and 4 are also governed by the SCA between Energy Northwest and the State of Washington, and regulations adopted by the EFSEC.

- Washington Department of Archaeology and Historic Preservation (DAHP) - The DAHP is a Washington State Cabinet-level agency managed by a Governor-appointed Director. DAHP is Washington's primary agency with knowledge and expertise in historic preservation and is the advocate for the preservation of Washington's historic and cultural resources.

- Federal Energy Regulatory Commission (FERC) - FERC licenses the Packwood Lake Hydroelectric Project pursuant to the Federal Power Act and oversees operation and maintenance of the facility.

- Washington Department of Ecology (WDOE) - Most of WDOE's involvement with Energy Northwest is through its support to EFSEC in overseeing conditions of the SCAs. For non-EFSEC projects (e.g., APEL, Nine Canyon Wind Project), WDOE is involved directly in solid waste and hazardous waste reporting, hazardous chemical inventory reporting (Community Right-to-Know), pollution prevention planning, and wastewater issues. WDOE also drafts air Notice of Construction and Prevention of Significant Deterioration (NOC/PSD) permits for EFSEC. WDOE is also responsible for accreditation of Energy Northwest's analytical laboratory. WDOE also provides the 401 Water Quality Certification for the Packwood Lake Hydroelectric Project.

- Washington Department of Health (WDOH) - Like WDOE, the WDOH is involved through its support to EFSEC. As the state-delegated agency for implementation of the Safe Drinking Water Act, WDOH is involved in permitting and oversight of public water systems at Columbia and IDC. Similarly, WDOH performs the same functions regarding radiological air emissions at Columbia.

- Washington Dept. of Fish and Wildlife – Is responsible for protecting, restoring and enhancing fish and wildlife and their habitats. This includes implementing migratory bird protective regulations.

- Washington Dept. of Natural Resources – Issues easement to EN for use of aquatic lands for construction and operation of in-river structures.

- U.S. Environmental Protection Agency (EPA) - Most of EPA's regulatory programs applicable to Energy Northwest activities are delegated to Washington State agencies. EPA Region X has retained authority to approve NOC/PSD air permits. Also, EPA has retained a significant role in assuring safe disposal of PCBs and in permitting hazardous waste management facilities (e.g., APEL).

- City of Richland - The City of Richland Publicly Owned Treatment Works receives and permits APEL's sanitary waste discharges. The City of Richland Municipal Landfill also receives Energy Northwest's solid waste from Richland operations.

- Benton Clean Air Agency (BCAA) - The BCAA regulates the fire suppression training facility as an air pollutant source. They also regulate asbestos and open burning.

- Benton County - Benton County issues conditional use permits (e.g., for the wind turbines).

- U.S. Forest Service - The Forest Service issues special use permits related to operations at Packwood.

- U.S Fish and Wildlife Service – Like the Washington Dept. of Fish and Wildlife they are they have federal responsibility to the protection of fish and wildlife and their habitat. They have been involved in the Licensing renewal of the Packwood Lake Hydroelectric Project.

END

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EDITORIAL
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If any manual approvals (hard copy signatures) are obtained then include printed name, signature, and date.