



ENERGY NORTHWEST

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GO2-10-105

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
LICENSE RENEWAL APPLICATION**

- References:
1. Letter GO2-10-011, dated January 19, 2010, WS Oxenford (Energy Northwest) to NRC, "License Renewal Application"
 2. Letter dated July 2, 2010, D Doyle (NRC) to WS Oxenford (Energy Northwest), "Request for Additional Information for the Review of the Columbia Generating Station License Renewal Application Environmental Review" (ADAMS Accession No. ML101750655)

Dear Sir or Madam:

By Reference 1, Energy Northwest requested the renewal of the Columbia Generating Station (Columbia) operating license. In Reference 2, the Nuclear Regulatory Commission (NRC) requested additional information to support the environmental review of the license renewal application. The requested information is included in the attachment to this letter.

No new commitments are included in this response.

If you have any questions or require additional information, please contact Abbas Mostala at (509) 377-4197.

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NRR

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I declare under penalty of perjury that the foregoing is true and correct. Executed on the date of this letter.

Respectfully,



SK Gambhir
Vice President, Technical Services

Attachment: Response to Request for Additional Information

cc: NRC Region IV Administrator
NRC NRR Project Manager
NRC Senior Resident Inspector/988C
EJ Leeds – NRC NRR
EFSEC Manager
RN Sherman – BPA/1399
WA Horin – Winston & Strawn
D Doyle – NRC NRR
BE Holian – NRC NRR
RR Cowley – WDOH

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**Additional Information Related to the Environmental Review
for Columbia Generating Station License Renewal**

RAI 4.11-1

Request:

Please provide a list of all known uranium fuel cycle facilities within a 50-mile radius of the Columbia Generating Station (CGS) site.

Background:

This information is requested to assist the staff in its preparation of section 4.11 on cumulative impacts.

Energy Northwest Response:

The only uranium fuel cycle facility within 50 miles of Columbia Generating Station that we have knowledge of is the AREVA NP Inc. fuel fabrication plant on Horn Rapids Road in Richland, Washington.

RAI 2.1.3-1

Request:

Section 3.1.2.1 of the ER describes the intake system including buried pipes that are "approximately 900 feet long." Provide a reference point for the measurement of these pipelines.

Background:

ESRP 2.1.3 and CFR 51.53(c) direct NRC staff to prepare a section in the SEIS that provides a description of the circulating water system. In addition, a biological assessment and essential fish habitat assessment has to be prepared to fulfill consultation requirements with U.S. Fish and Wildlife Service and the National Marine Fisheries Service. During discussions at the site audit, further information was provided by the applicant on the coordinates for the approximate location of the intake and discharge structures in the river. However, the coordinates do not match the description in the ER.

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Energy Northwest Response:

A reference point for the 900-foot long intake pipes is the east side of the makeup water pumphouse. The coordinates of this location are N 46° 28.282', W 119° 15.992'. These were acquired by a handheld GPS unit on July 2, 2010 and are accurate to about ±39 feet. The coordinates of the intake screens have been recorded as N 46° 28.282', W 119° 15.780'. Given that a minute of longitude at this latitude is about 4,200 feet, the difference in the GPS readings suggests the distance between the pumphouse and the screens is about 890 feet.

On the plant coordinate system the center of the east wall of the pumphouse is 12,150 ft N, 15,767 ft E. The intake screens are at 12,150 ft N, 16,660 ft E about 893 feet east of the pumphouse. The blowdown pipe outfall is at 12,082 ft N, 16,523 ft E. These coordinates are shown on Figures 3.4-7 and 3.4-10 of the CGS Environmental Report prepared for the Operating License application. Use of these two different sets of coordinates indicates intake piping length of about 900 feet.

However, the GPS coordinates will not plot the true locations on the USGS 7.5 minute Wooded Island map that covers the CGS site. The GPS uses the World Geodetic System of 1984 (WGS 84) as the mapping datum. This datum very closely overlaps the North American Datum of 1983 (NAD 83). Most USGS 7.5 minute topographic maps are based on the North American Datum of 1927 (NAD 27). The USGS Wooded Island map that covers the CGS site shows an east-west offset of roughly 290 feet between NAD 27 and NAD 83. Thus, if the above GPS coordinates are plotted on the Wooded Island map they will be about 290 feet west of the true locations.

RAI 5.1.3-1

Request:

Based on review of documents provided during the site audit, provide documentation describing Energy Northwest's cultural resources protection procedures for conducting work in undisturbed, disturbed and culturally sensitive areas and for inadvertent discoveries of human remains or archaeological material. Additionally, based on discussions held during the site audit and per Tribal request, provide documentation describing the cultural resources qualifications of the Cultural Resources Program Representative that oversees cultural resource compliance issues at CGS, as well as training on artifact/archaeological site identification and cultural resources protection for CGS site-wide personnel.

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Background:

ESRP 5.1.3 directs the staff to consider the impacts of operation on significant historic properties and the adequacy of proposed methods to mitigate any adverse impacts on these resources. Where appropriate, review operating procedures that would mitigate predicted adverse impacts. The review should be of sufficient detail to enable the reviewer to predict and assess potential impacts and to evaluate how these impacts should be treated in the licensing process. During the site audit, efforts to avoid adverse impacts to specific sites were discussed, along with the need to document specific actions that would be taken at individual sites.

Energy Northwest Response:

The following procedures describe the Cultural Resource Protection Program at Columbia Generating Station (CGS):

- GIH-8.2.1 – Environmental Aspects Identification
- GIH-8.1.9 – Resource Protection
- SWP-ENV-04 – Cultural Resources Protection Program
- PPM 10.2.32 – Soil Excavation, Backfill and Compaction
- SWP-CAP-08 – Stop Work Authority
- PPM 1.3.76 – Integrated Risk Management
- CMS 3.1.10 – Environmental Management in the Work Planning and Process
- RPI 20.0 – Environmental Program Description

GIH-8.2.1, Environmental Aspects Identification, is a corporate procedure that drives the annual Environmental Management System (EMS) process of Significant Aspects Determinations. EMS Representatives for line organizations annually assess their organizations' activities in relation to the Energy Northwest (EN) Environmental Aspects. The Environmental Aspects include land use as a Significant Environmental Aspect. In this exercise the organization also identifies how significantly and in what way their activities relate to the Environmental Aspect. For example, an evaluation is conducted on whether their activities may "damage or disturb historical/cultural resources."

GIH-8.1.9, Resource Protection, is a corporate procedure that provides a framework for coordination with Environmental & Regulatory Programs (E&RP) to ensure federal, state, and local agency regulatory requirements associated with natural and cultural resource protection are appropriately reviewed and considered in the project planning process. Projects or activities that involve land disturbing activities are potentially subject to resource protection regulations, and coordination with E&RP ensures that natural and cultural resources are considered and applicable permits obtained prior to work being performed.

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SWP-ENV-04, Cultural Resources Protection Program, is a CGS-specific, site-wide procedure that describes how impacts to potential or existing historic/cultural sites are assessed and considered when planning and performing work activities. It establishes a process to protect identified cultural resources and culturally sensitive areas. The procedure outlines requirements triggered by inadvertent discovery of potential historic/cultural material or human remains, including stoppage of work in accordance with SWP-CAP-08, protection of remains, notification and communication with Department of Energy/Richland Operations Office (USDOE), Washington Department of Archaeology and Historic Preservation (WDAHP), affected Native American tribes, Benton County Sheriff, and Benton County Coroner, and coordination with these agencies on how items should be dispositioned if they are discovered. It applies to all employees and persons working for or on behalf of EN who perform activities with the potential to affect culturally sensitive areas, undisturbed lands, historic/cultural materials, and human remains on land CGS leases from USDOE, and CGS sponsored activities that may occur on adjacent USDOE land.

PPM 10.2.32, Soil Excavation, Backfill and Compaction, is a CGS-specific procedure that requires completion of a pre-excavation approval sheet that includes a Cultural Resources Clearance from E&RP for land disturbing activities that occur on undisturbed lands or within culturally sensitive areas, as described in SWP-ENV-04. This approval sheet must accompany the applicable work package and be present at the job site. The procedure also requires notification to E&RP when potential historic/cultural objects or materials are encountered.

SWP-CAP-08, Stop Work Authority, is a CGS-specific procedure that establishes steps to immediately stop work in an orderly manner on any activity being performed, including when historic/cultural material or human remains are inadvertently discovered.

PPM 1.3.76, Integrated Risk Management, is a CGS-specific procedure that establishes the administrative controls, responsibilities, and duties for direction, control, and oversight of risk significant activities at CGS, including activities with environmental risk due to potential damage or inadvertent discovery of historical/cultural resources. The procedure strives to eliminate or mitigate the unanticipated and undesirable impact caused by the conduct of work. Attachment 8.2, Planner Risk Assessment Worksheet, contains an Environmental Risk Assessment checklist that assists the planner in evaluating the environmental risk level of planned activities. One item on the checklist specifically addresses cultural and historic resources.

CMS 3.1.10, Environmental Management in the Work Planning Process, is a procedure that applies to CGS activities conducted by the Construction and Maintenance Services (C&MS) organization. This procedure requires completion of an environmental checklist that includes answering land use questions which, if answered affirmatively, refers C&MS to E&RP for assistance.

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RPI-20.0, Environmental Program Description, is a Regulatory Programs instruction that describes the EN environmental programs owned by E&RP that have been established to ensure compliance with applicable environmental laws and regulations. Cultural and natural resource protection programs are described in Sections 6.8 and 6.9, respectively.

In addition to the procedures above, E&RP environmental staff perform routine environmental reviews of CGS work orders and contract requisitions. These reviews include the identification of activities that may result in environmental impacts, including inadvertent discovery of cultural/historic resources, to ensure that controls to mitigate these impacts are included in these documents.

The Natural and Cultural Resource Program owner within E&RP is Ms. Shannon Khounnala. Ms. Khounnala holds a Bachelor of Science degree in Zoology, with minors in Environmental Science and Technical Writing. She has more than 13 years of experience managing environmental projects that include historic and cultural resource regulatory considerations. She spent 18 months working for the US Army Corps of Engineers (USACE) Seattle District Environmental Resources Branch. This position required working on a variety of research and permitting projects with staff biologists and staff archaeologists. During this period, she received USACE cultural resource training on the federal requirements and consultation process. Following completion of her position with the USACE, Ms. Khounnala spent 11 years as a project manager for environmental consulting firms with a focus on transportation, energy, and industrial development projects. The majority of these projects required working with staff archaeologists and managing the Section 106 consultation as part of the project development process. During this period, Ms. Khounnala received specific cultural resources training provided by the Washington State Department of Transportation designed to teach participants how to recognize cultural resources when in the field. Additionally, Ms. Khounnala received in-house training on the review of cultural resource sampling plans, procedures for inadvertent discovery, and participated in field sampling efforts. Since joining EN, Ms. Khounnala attended training on the National Environmental Policy Act and Section 106 regulatory requirements provided by the National Preservation Institute.

Following the development of SWP-ENV-04, the CGS cultural resources protection procedure, a briefing on regulatory requirements, project planning protocols, and inadvertent discovery procedures was provided by Ms. Khounnala to EMS Representatives. EN does not conduct formal training on artifact/archaeological site identification and cultural resources protection for CGS site-wide personnel.

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RAI 3.2-1

Request:

Section 3.1.5 of the ER references Regulatory Order 672, which limits air emissions from CGS to below regulatory thresholds (EFSEC 1996). Provide a list of air emission sources that are permitted under Order 672, as well as the associated annual air emissions (pollutant and amount) for the most recent five years.

Background:

ESRP 3.2 directs NRC staff to prepare a section in the SEIS that provides background information to be used in evaluating air quality. 10 CFR 51.45(d) states that the "environmental report shall also include a discussion of the status of compliance with applicable environmental quality standards and requirements...which have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection."

Energy Northwest Response:

Regulatory Order 672, referred to by the Energy Facility Site Evaluation Council as EFSEC Order No. 672 (Order 672), specifically identifies the significant emission units – three large emergency diesel generators and the auxiliary steam boiler. Table 1 lists the emission units that are identified in Order 672. The permit application that preceded the order also identified insignificant emission sources such as three smaller standby diesel generators and two diesel driven fire pumps. In 2005, Order 672 was amended to recognize a new 400 kW standby diesel generator as an additional insignificant emissions source.

Order 672 establishes a diesel fuel usage limitation of 780,000 gallons per year. This fuel usage cap is based on calculative methods. EFSEC used a 90-tons-per-year emissions target for the cap to allow a 10-tons-per-year buffer between the calculated emissions and the threshold of 100 tons per year for a major source requiring an air operating permit.

Starting in 2006, Energy Northwest has provided EFSEC an annual air emissions source registration for CGS in accordance with WAC 463-78-100. The annual source registration includes total calculated emissions for the significant emission units. Calculated emissions are based primarily on emission factors published by the U.S. Environmental Protection Agency in *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources (AP-42)*. Table 2 lists annual diesel fuel usage by the significant units for the most recent five years and air emission estimates for the past four years.

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Table 1 List of EFSEC Order No. 672 Significant Emission Units

Emission Unit Description	CGS Equipment Number
Diesel Generator 1	DG-GEN-DG1
Diesel Generator 2	DG-GEN-DG2
Diesel Generator 3	HPCS-GEN-DG3
Auxiliary Steam Boiler	AS-BLR-1

**Table 2 Annual Fuel Use and Calculated Air Emission Estimates
for Significant Emission Units**

Year	Fuel usage (gallons)	NO _x (tons)	CO (tons)	SO ₂ (pounds)	PM (pounds)	PM ₁₀ (pounds)	VOC (pounds)	Pb (pounds)
2005	48,899	-	-	-	-	-	-	-
2006	56,582	10.5	2.8	264	473	398	585	0.4
2007	60,896	11.9	3.2	198	533	452	667	0.5
2008	59,030	8.6	2.3	341	406	333	472	0.3
2009	74,608	8.3	2.2	359	418	330	446	0.3