ENERGY NORTHWEST

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August 11, 2011
GO2-11-137

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

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397 SUPPLEMENTAL INFORMATION PROVIDED TO REPORT 05000397/2010007**

References:
1) Letter, GO2-10-11, dated January 19, 2010, WS Oxenford (Energy Northwest) to NRC, "License Renewal Application"

2) Letter dated December 17, 2010, NRC to ME Reddemann (Energy Northwest), "Columbia Generating Station – NRC License Renewal Inspection Report 05000397/2010007," (ADAMS Accession No. ML 103540496)

Dear Sir or Madam:

By Reference 1, Energy Northwest requested the renewal of the Columbia Generating Station (Columbia) operating license. Via Reference 2, the Nuclear Regulatory Commission (NRC) provided Energy Northwest with a copy of the Inspection Report.

This letter provides follow-up information on various issues raised in Reference 2.

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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RIGHT

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

Respectfully,

DA Swank
Acting Vice President, Engineering

Attachment: SUPPLEMENTAL INFORMATION PROVIDED TO REPORT 05000397/2010007

cc: NRC Region IV Administrator
NRC NRR Project Manager
NRC Senior Resident Inspector/988C
EFSEC Manager
RN Sherman – BPA/1399
WA Horin – Winston & Strawn
AD Cunanan - NRC NRR (w/a)
BE Holian - NRC NRR
RR Cowley – WDOH

SUPPLEMENTAL INFORMATION PROVIDED TO REPORT 05000397/2010007
"Columbia Generating Station – NRC License Renewal Inspection Report 05000397/2010007,"
(ADAMS Accession No. ML103540496)

NRC Question:

Do you have any plans to make the aging mechanism training periodic or recurring training?

Energy Northwest Response:

Training on aging assessment is currently being added to the initial training for engineers (Engineering Support Personnel). Those that are in the Engineering Support Personnel (ESP) population have received classroom training on component aging. The Training Advisory Group for ESP has been requested to consider requiring periodic or recurring training on aging issues.

NRC Question:

When will you issue or revise the Aging Management Program Evaluation Results (10-element programs) for the plant specific AMPs?

Energy Northwest Response:

In order to track this activity Action Request (AR) 00243524 was created. The tentative due date for this activity is November 30th, 2011.

NRC Question:

Have you revised the Aging Management Program Evaluation Results (10-element program) document?

Energy Northwest Response:

No revisions have been made.

NRC Question:

For the manholes E7 & E8 – what component cables are routed through the manholes? Have you created a recurring task to remove water, as specific in AR 204053?

Energy Northwest Response:

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
BSH6-0025/1	6900Vac	E-DISC-TR6/61	Y	Y	MH-E007
BSH6-0025/2	6900Vac	E-DISC-TR6/61	Y	Y	MH-E007
BMISC-0001	<400V	Supervisory Control	Y	N	MH-E007
BSH6-0025/1	6900Vac	E-DISC-TR6/61	Y	Y	MH-E008
BSH6-0025/2	6900Vac	E-DISC-TR6/61	Y	Y	MH-E008
BM6P-0010	480Vac	CW-FN-7	N	N	MH-E008
BM6P-0011	<400V	CW-VBS-7 Vibration Sw.	N	N	MH-E008
BM6P-0013	480Vac	CW-FN-7 HEATER	N	N	MH-E008
BM6P-0020	480Vac	CW-FN-8	N	N	MH-E008
BM6P-0021	<400V	CW-VBS-8 Vibration Sw.	N	N	MH-E008
BM6P-0023	480Vac	CW-FN-8 HEATER	N	N	MH-E008
BM6P-0030	480Vac	CW-FN-9	N	N	MH-E008
BM6P-0031	<400V	CW-VBS-9 Vibration Sw.	N	N	MH-E008
BM6P-0033	480Vac	CW-FN-9 HEATER	N	N	MH-E008
BM6P-0040	480Vac	CW-FN-10	N	N	MH-E008

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
BM6P-0041	<400V	CW-VBS-10 Vibration Sw.	N	N	MH-E008
BM6P-0043	480Vac	Spare	N	N	MH-E008
BM6Q-0010	480Vac	CW-FN-11	N	N	MH-E008
BM6Q-0011	<400V	CW-VBS-11 Vibration Sw.	N	N	MH-E008
BM6Q-0013	480Vac	CW-FN-11 HEATER	N	N	MH-E008
BM6Q-0020	480Vac	CW-FN-12	N	N	MH-E008
BM6Q-0021	<400V	CW-VBS-12 Vibration Sw.	N	N	MH-E008
BM6Q-0023	480Vac	CW-FN-12 HEATER	N	N	MH-E008
BM6R-0010	480Vac	CW-V-4	N	N	MH-E008
BM6R-0011	<400V	CW-V-4 Control	N	N	MH-E008
BM6R-0020	480Vac	CW-V-5	N	N	MH-E008
BM6R-0021	<400V	CW-V-5 Control	N	N	MH-E008
BM6R-0030	480Vac	CW-V-6	N	N	MH-E008
BM6R-0031	<400V	CW-V-5 Control	N	N	MH-E008
BP6RA-0002	480Vac	E-TR-6RB	N	N	MH-E008
BSL61-0030/1	480Vac	E-MC-6N	Y	Y	MH-E008
BSL61-0030/2	480Vac	E-MC-6N	Y	Y	MH-E008
BCOMA-0005	<400V	CW-TE-1B1	N	N	MH-E008
BCOMA-0006	<400V	CW-TE-1B2	N	N	MH-E008

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
BCOMA-0007	<400V	CW-TE-1B3	N	N	MH-E008
BCOMA-0008	<400V	CW-TE-1B4	N	N	MH-E008
BCOMA-0017	<400V	CW-TE-11B1	N	N	MH-E008
BCOMA-0018	<400V	CW-TE-11B2	N	N	MH-E008
BCOMA-0019	<400V	CW-TE-11B3	N	N	MH-E008
BCOMA-0020	<400V	CW-TE-11B4	N	N	MH-E008
BCOMA-0021	<400V	CW-TE-11C1	N	N	MH-E008
BCOMA-0022	<400V	CW-TE-11C2	N	N	MH-E008
BCOMA-0023	<400V	CW-TE-11C3	N	N	MH-E008
BCOMA-0024	<400V	CW-TE-11C4	N	N	MH-E008
BGFD-0612	<400V	Ground Fault Indicating Lights	N	N	MH-E008
BMISC-0001	<400V	Supervisory Control	Y	N	MH-E008

Although you didn't ask, the cables in MH-E044 are:

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
AM3B-0263	<400V	IBD-TS-F5	N	N	MH-E044
AM3B-0263#	<400V	IBD-TS-F5	N	N	MH-E044
AM3B-0266	<400V	IBD-TS-F11	N	N	MH-E044
AM3B-0266#	<400V	IBD-TS-F11	N	N	MH-E044
AM3C-0220	480VAC	E-PP-3CB	Y	Y	MH-E044
ASH5-0054	<400V	XFMR TR-N2 GRD RELAY CT LEADS	N	N	MH-E044
ASH5-0055	<400V	XFMR TR-S GRD RELAY CT LEADS	N	N	MH-E044
ASM1-0025	<400V	XFMR TR-N1 GRDRELAY CT LEADS	N	N	MH-E044
ATRM-0026	<400V	ASHE SUBSTA POLARIZING	N	N	MH-E044
ATRM1-0001	<400V	TEMP RCDR TRA-TR-24	N	N	MH-E044
ATRM1-0002	<400V	E-TR-M1 ALARM	N	N	MH-E044

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
ATRM1-0003	<400V	E-TR-M1 63SP TRM-1 86TM	N	N	MH-E044
ATRM1-0004	<400V	E-TR-M1 CT SET 4 CONN 87TM RELAY	N	N	MH-E044
ATRM1-0005	<400V	E-TR-M1 POT SUPPLY X-WDGBPA LINE RELAYS	N	N	MH-E044
ATRM1-0006	<400V	E-TR-M1 CT SET 2 CONN SECONDARY RELAY	N	N	MH-E044
ATRM1-0009	<400V	E-TR-M1 FAN CONTROL	N	N	MH-E044
ATRM2-0001	<400V	E-TR-M2 TEMP RCDR TRA-TR-24	N	N	MH-E044
ATRM2-0002	<400V	E-TR-M2 ALARM	N	N	MH-E044
ATRM2-0003	<400V	E-TR-M2 63SP TRM-2 86TM	N	N	MH-E044
ATRM2-0004	<400V	E-TR-M2 CT SET 4 CONN 87TM RELAY	N	N	MH-E044
ATRM2-0005	<400V	E-TR-M2 POT SUPPLY X-WDGBPA LINE RELAYS	N	N	MH-E044
ATRM2-0006	<400V	E-TR-M2 CT SET 2 CONN SECONDARY RELAY	N	N	MH-E044
ATRM2-0009	<400V	E-TR-M2 FAN CONTROL	N	N	MH-E044

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
ATRM3-0001	<400V	E-TR-M3 TEMP RCDR TRA-TR-24	N	N	MH-E044
ATRM3-0002	<400V	E-TR-M3 ALARM	N	N	MH-E044
ATRM3-0003	<400V	E-TR-M3 63SP TRM-3 86TM	N	N	MH-E044
ATRM3-0004	<400V	E-TR-M3 CT SET 4 CONN 87TM RELAY	N	N	MH-E044
ATRM3-0005	<400V	E-TR-M3 POT SUPPLY X-WDGBPA LINE RELAYS	N	N	MH-E044
ATRM3-0006	<400V	E-TR-M3 CT SET 2 CONN SECONDARY RELAY	N	N	MH-E044
ATRM3-0009	<400V	E-TR-M3 FAN CONTROL	N	N	MH-E044
ATRM4-0001	<400V	E-TR-M4 TEMP RCDR TRA-TR-24	N	N	MH-E044
ATRM4-0002	<400V	E-TR-M4 ALARM	N	N	MH-E044
ATRM4-0003	<400V	E-TR-M4 63SP TRM-4 86TM	N	N	MH-E044
ATRM4-0004	<400V	E-TR-M4 CT SET 4 CONN 87TM RELAY	N	N	MH-E044
ATRM4-0005	<400V	E-TR-M4 POT SUPPLY X-WDGBPA LINE RELAYS	N	N	MH-E044

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
ATRM4-0006	<400V	E-TR-M4 CT SET 2 CONN SECONDARY RELAY	N	N	MH-E044
ATRM4-0009	<400V	E-TR-M4 FAN CONTROL	N	N	MH-E044
ATRN1-0001	<400V	E-TR-N1 TEMP RCDR TRA-TR-24	N	N	MH-E044
ATRN1-0001#	<400V	E-TR-N1 TEMP RCDR TRA-TR-24	N	N	MH-E044
ATRN1-0002	<400V	E-TR-N1 TRIPPING RLYS	N	N	MH-E044
ATRN1-0002#	<400V	E-TR-N1 TRIPPING RLYS	N	N	MH-E044
ATRN1-0003	<400V	E-TR-N1 ANNUNCIATOR C4 TR-N1 TROUBLE AL	N	N	MH-E044
ATRN1-0003#	<400V	E-TR-N1 ANNUNCIATOR C4 TR-N1 TROUBLE AL	N	N	MH-E044
ATRN1-0004	<400V	E-TR-N1 DIFF RLYS	N	N	MH-E044
ATRN1-0004#	<400V	E-TR-N1 DIFF RLYS	N	N	MH-E044
ATRN1-0006	<400V	E-TR-N1 OVERALL DIFF RLY	N	N	MH-E044
ATRN1-0006#	<400V	E-TR-N1 OVERALL DIFF RLY	N	N	MH-E044
ATRN2-0001	<400V	E-TR-N2 TEMP RCDR TRA-TR-24	N	N	MH-E044
ATRN2-0002	<400V	E-TR-N2 TRIPPING RLYS	N	N	MH-E044

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
ATRN2-0003	<400V	E-TR-N2 ANNUNCIATOR C4 TR-N2 TROUBLE AL	N	N	MH-E044
ATRN2-0004	<400V	E-TR-N2 DIFF RLYS	N	N	MH-E044
ATRN2-0006	<400V	E-TR-N2	N	N	MH-E044
ATRS-0001	<400V	E-TR-S TEMP RCDR TRA-TR-24	Y	N	MH-E044
ATRS-0002	<400V	E-TR-S 86TS 63SP INTERLOCK	Y	N	MH-E044
ATRS-0003	<400V	E-TR-S TROUBLE ALARM TR-S	Y	N	MH-E044
ATRS-0005	<400V	E-TR-S NEUT OVERCURREN T RLYS	Y	N	MH-E044
ATRS-0006	<400V	E-TR-S METERS Y-WINDING	Y	N	MH-E044
ATRS-0007	<400V	E-TR-S METERS X-WINDING	Y	N	MH-E044
ATRS-0008	<400V	E-TR-S DIFF RELAY PHASE C	Y	N	MH-E044
ATRS-0009	<400V	E-TR-S POLARIZING CUR ASHE SUBSTA	Y	N	MH-E044
ATRS-0010	<400V	E-TR-S TEMP RECORDER TRA-TR-24	Y	N	MH-E044
ATRS-0011	<400V	E-TR-S METERING POT SUPPLY	Y	N	MH-E044

Cable id	Voltage	To equip	LR In-Scope	LR E3	MH
ATRS-0016	<400V	E-TR-S NO LOAD TAP ALARM TR-S	Y	N	MH-E044
ATRS-0021	<400V	E-TR-S DIFF RELAY PHASE B	Y	N	MH-E044
ATRS-0022	<400V	E-TR-S DIFF RELAY PHASE A	Y	N	MH-E044
BM2D-0240	480VAC	E-PP-2DB	Y	Y	MH-E044

NRC Question:

Have you created a recurring task to remove water, as specific in AR 204053?

Energy Northwest Response:

AR 204053 was written because there was no preventative maintenance (visual inspection) for the electrical manholes at Columbia. It stated that there should be a periodic inspection to ensure there is no water intrusion and overall cleanliness. The AMP, Inaccessible Power Cables Not Subject to 10 CFR 50.49 EQ Requirements Program, requires inspection of the plant manholes (and to drain them, if necessary) on a periodic basis. Acceptance criteria for inspection of manholes are defined by the observation that the cables are not submerged or immersed in standing water at the time of inspection. AR 204053 was closed out stating that actions will be tracked under AR 201862 (CGS Cable Condition Monitoring Program) which is currently scheduled for completion by 4/15/2013. The more specific task of establishing periodic inspection tasks is addressed under AR 201862 task 08 which is scheduled for completion by 09/28/2011.

If standing water is observed during the periodic inspection the corrective action program will be used to remediate the situation. The corrective action program considers issues such as the significance of the water level, the operability of the cable, the extent of the condition, the potential causes, the corrective actions required, the likelihood of recurrence, and changes to the inspection frequency.

NRC Question:

Do you know how long it takes for the water to accumulate and cover the cables?

Energy Northwest Response:

Energy Northwest expects that it will take years to accumulate enough water to cover a cable located in a manhole, based on inspections performed. As stated in the letter dated December 7, 2010, SK Gambhir (Energy Northwest) to NRC "RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LICENSE RENEWAL APPLICATION" (ML103420568).

"Water was drained from manholes E8 and E7 and an examination of the interior of the manholes did not provide positive evidence of the water entry point. E8 did have damaged grout between the metal cover frame and the top slab of the manhole. This grout has been repaired. This is a possible (and likely) location for water entry as this grout line is at ground level. E8 has been re-inspected on multiple occasions after the grout was repaired and found to be dry even after heavy rain. The water accumulation in E8 was probably due to surface water (rain and snow melt) accumulating over a long period of time (many years) and a clogged French drain. E7 did not have the grout issue, but the water accumulation was probably due to a clogged French drain.

The configuration of manhole E44 is such that a ground-level cable trough enters the manhole from the side (near the top), and is sloped down into the manhole volume. The adjacent manhole (for the complementary electrical train), manhole E43, which has the same configuration, was found completely dry. The water accumulation in manhole E44 may have taken place over a long period of time, but could also have been caused by an event such as heavy rain or testing of the transformer fire protection system due to its configuration. Remedial actions for manhole E44 have been initiated under the corrective action program and include removal of the water and cleaning/repairing the French drain."

The periodic inspections described in the response to the previous question are expected to preclude the accumulation over time of sufficient water to cover the cables located in manholes.

NRC Question:

If cables are safety-related, please provide documentation that shows the cables can be submerged.

Energy Northwest Response:

None of the cables in E7, E8, or E44 are safety related.

NRC Question:

When will the CGS Cable Condition Monitoring Program be established as specified in AR 201862?

Energy Northwest Response:

AR 201862 is currently scheduled for completion by 4/15/2013.

NRC Question:

When will R20 be completed?

Energy Northwest Response:

Columbia is still in R20. It is believed that the outage will end in the mid-to late September, 2011.

NRC Question:

How long do you estimate it will take to complete the design and installation of the deep bed anodes?

Energy Northwest Response:

Due to various technical issues, the design for the deep bed cathodic protection is scheduled to be completed February, 2013. Installation is not currently scheduled.

NRC Question:

What is your best estimate for placing in service your online noble metal chemistry addition process?

Energy Northwest Response:

The current schedule for On Line Noble Chemistry Application is during November – December 2011.

NRC Question:

For the quarterly system review tasks – what is number of identified tasks issued each quarter and the response/review performed by the system engineers?

What sort of effectiveness review or audit of these reviews is planned?

Energy Northwest Response:

There are 26 assignments (tasks) associated with AR 230384 that will have the system engineers perform quarterly walkdowns.

System engineer is to document walkdowns that took place during current quarter in accordance with site procedures. System engineer is to document all issues identified during the walkdown including any associated condition report (CR). Also, system engineer is to document any trends that are being monitored.

AR 230384 was initiated last quarter of 2010, but the first assignments to document walk downs under this AR are coming due this current quarter (3Q 2011 – due date of 9/30/2011). Only two walk downs have been performed due to Columbia currently being in R20 refueling outage. The Turbine system engineer noted as-found issues with specific components and referenced the associated CR for each instance.

One expectation of System Engineering supervisors is to assess effectiveness of System Engineer walkdowns and provide coaching to reinforce established standards. This expectation also includes the use of field observations of the walkdowns to accomplish this objective. The System Engineering manager also has an expectation to perform field observations of walkdowns to monitor human performance within the department. Thus, existing procedure requirements will drive review of these system walkdowns.

NRC Question:

Please provide the results of your evaluation of the 230kV insulator evaluations when complete, and schedule a telecon to have a discussion on the results.

Energy Northwest Response:

Energy Northwest requested Bonneville Power Administration (BPA), which owns and operates the Ashe substation, to conduct an Equivalent Salt Deposition Density (ESDD) test on a sample of in-scope 230 kV station post insulators located at Ashe. ESDD is an industry standard technique of swiping the surface of an insulator and measuring the amount of contamination found in order to determine its density. The result is expressed in mg/cm^2.

Data shows that in 27+ years of exposure, the highest ESDD value is 0.0383 mg/cm^2 which was located on the underside of the bottom skirt of the A phase of the line drop station post insulator. The highest value for the top surfaces was 0.0086 mg/cm2. BPA and Energy Northwest have established the action level to be 0.05 mg/cm^2. An industry standard establishes 4 contamination site severity levels. They are Very light (0 – 0.03 mg/cm^2), Light (0.03 – 0.06 mg/cm^2), Average/moderate (0.06 – 0.10 mg/cm^2), and Heavy (>0.10 mg/cm^2). The use of the light level as the acceptance criteria is considered by Energy Northwest as being conservative. Therefore, the results show that the drift from the Circulating Water System Cooling Towers does not adversely impact the insulators

located at the Ashe substation. Energy Northwest is available to discuss the results at your convenience.

RAI B.2.31-2 (ML11195A240) requested information on this subject. Energy Northwest will be providing a response shortly and will provide NRC Region IV a copy.