

July 15, 2008

Mr. J. V. Parrish  
Chief Executive Officer  
Energy Northwest  
P.O. Box 968 (Mail Drop 1023)  
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION - WITHDRAWAL OF REQUEST FOR  
EMERGENCY PLAN CHANGE (TAC NO. MD6177)

Dear Mr. Parrish:

By application dated July 26, 2007, as supplemented by letter dated October 31, 2007, Energy Northwest (EN, the licensee) requested a change to the Emergency Plan for the Columbia Generating Station (CGS). The proposed change would remove the predetermined effluent radiation monitor threshold readings for the Emergency Action Levels (EALs) presented in Section 4, Table 3, "Effluent Monitor Classification Thresholds." By letter dated July 2, 2008, EN subsequently withdrew its request.

As noted in a teleconference between Mr. G. Cullen (EN) and Mr. R. Nelson, et al. (NRC), on June 10, 2008, the NRC staff determined that your proposed change does not meet the standards of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.47(b), and the requirements of Appendix E to 10 CFR Part 50. Specifically, the proposed change reduces the assurance that timely and accurate emergency classifications can and will be made, thereby impermissibly degrading the licensee's ability to take measures to adequately protect the public as required by the Commission's emergency preparedness regulations. The NRC staff conclusion was based on the following determinations: (1) the proposed change is inconsistent with timeliness expectations in EAL guidance in that it replaces predetermined, directly and readily observable EAL thresholds with manually-initiated dose calculations for which the analyst must manually retrieve and input necessary parameters, (2) the proposed change removes the explicit timeliness criterion for the dose assessment, (3) by substituting a dose threshold and using actual meteorology for the unusual event and alert EALs, the proposed changes are inconsistent with the NUMARC-007 initiating conditions and their bases, and (4) the elimination of the liquid effluent radiation monitor EAL thresholds will unacceptably delay the classification pending the results of manually-initiated sampling and analysis since the computer-based dose calculation does not address liquid releases.

The NRC staff acknowledges your request to withdraw the application, and has ceased its review. For your consideration, the basis for the NRC staff conclusion is contained in the enclosed safety evaluation.

J.V. Parrish

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If you have any questions regarding this matter, please contact me at 301-415-2296.

Sincerely,

/RA/

Carl F. Lyon, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure: As stated

cc w/encl: See next page

J.V. Parrish

- 2 -

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Columbia Generating Station

(6/10/2008)

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SAFETY EVALUATION BY THE  
OFFICE OF NUCLEAR SECURITY AND INCIDENT RESPONSE  
RELATED TO REQUEST FOR EMERGENCY PLAN CHANGE REGARDING  
REMOVAL OF EFFLUENT RADIATION MONITOR EMERGENCY ACTION LEVELS  
ENERGY NORTHWEST  
COLUMBIA GENERATING STATION  
DOCKET NO. 50-397

1.0 INTRODUCTION

By letter dated July 26, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072190592), as supplemented by letter dated October 31, 2007 (ADAMS Accession No. ML073180412), Energy Northwest (EN, the licensee) requested an emergency plan change for the Columbia Generating Station (Columbia). The proposed change would remove the predetermined effluent radiation monitor threshold readings for the emergency action levels (EALs) presented in Emergency Plan Implementing Procedure (EPIP) 13.1.1, "Classifying the Emergency." Specifically, EN is proposing to remove EALs 5.1.U.1, 5.1.A.1, 5.1.S.1, and 5.1.G.1 from Table 4-1, and remove the associated Table 3, "Effluent Monitor Classification Thresholds." In lieu of these EALs, EN proposes to rely on the results of analyses performed using a computerized dose assessment program compared to the thresholds in existing EALs 5.1.U.2, 5.1.A.2, 5.1.S.2, and 5.1.G.2. Once this proposed change is implemented, Columbia would no longer have the capability to make emergency classifications based solely on the direct observation of an effluent radiation monitor reading exceeding a predetermined value, but would instead rely on dose calculations performed by plant personnel. These dose calculations would use these effluent radiation monitor readings and other parameters as manually input to the computerized dose assessment.

EN determined that removing Table 3 and the associated EALs would decrease the effectiveness of its emergency plan because it removes information that EN personnel could use to classify an event. Accordingly, EN is applying for the U.S. Nuclear Regulatory Commission (NRC) approval of the proposed change pursuant to the requirements of Section 54(q), Part 50, Title 10 of the *Code of Federal Regulations* (i.e., 10 CFR 50.54(q)). EN states in its request that the effluent radiation monitoring instrumentation is scheduled to be upgraded in the near future, and eliminating Table 3 will avoid costs associated with updating the table to reflect the new instrumentation and those costs associated with personnel training on the new table.

## 2.0 REGULATORY EVALUATION

- 2.1 A licensee authorized to possess and operate a nuclear power reactor is required by 10 CFR 50.54(q) to follow and maintain in effect emergency plans which meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities." Proposed changes to these plans that decrease the effectiveness of the approved plans may not be implemented without application to and approval by the Commission. As EN has determined that its proposed changes constitute a decrease in effectiveness, it is applying for Commission approval. Since the Commission's emergency preparedness regulations do not explicitly preclude the changes proposed by EN, it remains to the staff to evaluate whether or not the approved plans, as modified, continue to meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50 and that there continues to be reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.
- 2.2 Planning standard 10 CFR 50.47(b)(4) requires that the licensee's plan contain a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters. Appendix E, Section IV.B, "Assessment Actions," specifies that the EALs be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. Appendix E, Section IV.C, "Activation of Emergency Organization," further specifies that EALs be based not only on onsite and offsite radiation monitoring information, but also on readings from a number of sensors that indicate a potential emergency.
- 2.3 Regulatory Guide 1.101 (RG 1.101), "Emergency Response Planning and Preparedness for Nuclear Power Reactors," provides guidance on methods acceptable to NRC's staff for implementing specific parts of the NRC's regulations; in this case, 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. RG 1.101 endorses NUREG-0654/FEMA-REP-1 (NUREG-0654), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," which provides specific acceptance criteria, including those addressing EALs, for complying with 10 CFR 50.47(b).
- 2.4 Section II of NUREG-0654, Evaluation Criterion II.D.2, references Appendix 1, "Basis for Emergency Action Levels for Nuclear Power Facilities," to NUREG-0654. Criterion II.H.5 specifies onsite monitoring systems which would be used to initiate the emergency measures identified in Appendix 1. Included are ". . . radiological monitors (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment) . . ." Criterion II.I.1 requires the licensee to identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and identify the plant parameter values or other information which corresponds to the example initiating conditions (IC) in Appendix 1. Criterion II.I.4 requires the licensee to establish the relationship between effluent monitor readings, onsite and offsite exposures, and contamination for various meteorological conditions.

Appendix 1 to NUREG-0654 provides a listing of example initiating conditions for each of the four emergency classifications which are to form the basis for establishing the specific plant instrumentation readings (as applicable) which, if exceeded, will initiate the

emergency class. For each of the four emergency classifications, Appendix 1 identifies example initiating conditions associated with radiological effluents; effluent radiation monitor readings are explicitly identified as initiating examples for the site-area emergency and the general emergency. In developing this guidance, the staff placed (and continues to place) emphasis on directly observable plant instrumentation, including effluent radiation monitors, since alarms and displays on this instrumentation generally provide the most ready and timely triggers for necessary emergency actions. The staff also expects the EAL scheme to incorporate multiple, diverse, and redundant EALs that identify classification thresholds based on plant parameter instrumentation, assessments, reports from plant personnel, and results of surveillances and other assessments, to ensure that the unavailability of any single instrument, assessment, or report will not preclude a timely and accurate classification.

The EAL scheme currently in place at Columbia is based on NUMARC/NESP-007, "A Methodology for Development of Emergency Action Levels," which the NRC endorsed in RG 1.101 as an alternative to the guidance in NUREG-0654. As documented by a letter from J. Clifford (NRC) to J. Parrish (licensee) dated December 9, 1994, the NRC found that the Washington Public Power Supply System (WPPSS)<sup>1</sup> site-specific implementation of the NUMARC-007 EAL methodology, which included EAL thresholds based on both radiation monitor indications and the results of dose assessments, was acceptable.

- 2.5 By its very nature, an emergency instills a sense of urgency and dictates the necessity for prompt action, a fundamental aspect of a licensee's emergency preparedness program. The intent of the emergency classification scheme is to provide an effective mechanism to rapidly identify and classify abnormal plant conditions into one of four emergency classifications. Subsequent emergency response organization (ERO) and offsite response organization (ORO) response actions and measures are implemented in a staged manner proportional to the declared emergency classification. If an emergency classification is delayed, or is inaccurate, the subsequent emergency response actions, including notification of OROs, may not be timely and emergency response personnel, facilities, and equipment may not be ready should it become necessary to implement measures to protect the public health and safety. The staff's emphasis on timely and accurate classification is evident within the EAL scheme guidance developed or endorsed by the staff (Information Notice 85-80, "Timely Declaration of an Emergency Class," Emergency Preparedness Position No. 2, "Timeliness of Classification of Emergency Conditions," the NRC-endorsed Nuclear Energy Institute (NEI)-99-02, "Regulatory Assessment Performance Indicator Guideline," and Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process").
- 2.6 There is a regulatory precedent for the proposed change. As a result of a 1992 NRC review (reference letter from R. Scarano (NRC) to G. Sorensen (licensee) dated June 30, 1992, and subsequent NRC Inspection Report 50-397/93-42, dated December 14, 1993), the staff took issue with the licensee's omission of EAL thresholds based on

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<sup>1</sup> Washington Public Power Supply System (WPPSS; now Energy Northwest) requested NRC review and approval of an EAL scheme based on the NUMARC/NESP-007 guidance, for the WPPSS's Nuclear Project No. 2 plant (now Columbia).

radiation monitor indication and its reliance on offsite whole body and thyroid dose rates. The staff expressed concern that, in the absence of a real-time, on-line dose assessment capability, or a demonstration that computerized dose assessment could be completed in a timely manner, necessary classifications could be delayed beyond classification timeliness expectations. In response, WPPSS committed to include the calculated threshold effluent monitor readings as new site area emergency and general emergency EALs. EN identified these inspection comments in its current application with the apparent implication that since Columbia now has computerized dose assessment (albeit not real-time and on-line), the tabulation of radiation monitor thresholds is no longer needed.

### 3.0 TECHNICAL EVALUATION

#### 3.1 General

In performing this evaluation, the staff considered the licensee's application and supplemental information; the NUMARC-007 document; the licensee's December 30, 1993, letter requesting NRC review and approval of its implementation of the NUMARC-007 EALs; the licensee's October 13, 1994, response to requests for additional information; the NRC safety evaluation dated December 9, 1994; and the staff's experience in performing similar reviews.

EN's application describes the Quick Emergency Dose Projection System (QEDPS), which EN proposes to rely upon, as being a group of standalone personal computers (PCs), any one of which can execute the QEDPS software. The QEDPS is part of the Emergency Dose Projection System. These PCs are located in the control room, the technical support center, the emergency operations facility (EOF), the joint information center, and the alternative EOF. The PCs within the control room are powered from reliable power sources. The QEDPS software is based on Version 2.0 of the NRC RASCAL program. The QEDPS assessment is based on real-time gaseous effluent monitor, plant, and meteorological data. However, QEDPS does not have automatic data feed and would require ERO personnel to retrieve the needed data from the relevant instrumentation and to manually input the data. EN states that QEDPS provides a fast, accurate, and reliable basis for classification and protective action recommendations, and that the on-shift ERO members have demonstrated the capability to complete QEDPS assessments typically within about 1 minute. The staff does not question EN's characterization of the QEDPS as a reliable, robust computer-based system and, indeed, views the QEDPS as a useful supplement to the Columbia EAL scheme.

### 3.2 Proposed Changes

#### 3.2.1 Unusual Event and Alert EALs (Alert-specific data enclosed in brackets)<sup>2</sup>

Current: (IC 5.1.U [5.1.A]) Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two [200] times ODCM limits [the radiological specifications] for 60 [15] minutes or longer.

(EAL 5.1.U.1 [5.1.A.1]) Offsite dose calculations cannot be performed AND a valid reading exists which exceeds or is expected to exceed Table 3 Column "UE" ["Alert"] for GT 60 [15] minutes.

(EAL 5.1.U.2 [5.1.A.2]) Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" ["Alert"] OR Sample analysis indicates release GT 2 [200] times ODCM 6.2.1.1 or 6.2.1.2 limits for GT 60 [15] minutes.

Proposed: (IC 5.1.U [5.1.A]) Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two [200] times ODCM limits [the radiological specifications] for 60 [15] minutes or longer.

(EAL 5.1.U.1 [5.1.A.1]) Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" ["Alert"] OR Sample analysis indicates release GT 2 [200] times ODCM 6.2.1.1 or 6.2.1.2 limits for GT 60 [15] minutes.

#### 3.2.2 Staff Evaluation

The proposed change would eliminate the current EAL 5.1.U.1 [5.1.A.1] and the referenced Table 3. As determined by EN, this proposed change would reduce the effectiveness of the plan since the change would eliminate data that the Columbia ERO currently relies upon to classify emergencies, and would cause classifications to be based on the results of a manually-initiated dose assessment. As a result of its review, the staff finds the following:

- a. The proposed change eliminates a directly observable plant instrumentation threshold and places reliance on a manually-initiated computer-aided dose calculation that is based, in part, on the readings provided by that instrumentation. This change is inconsistent with regulations and guidance that place emphasis on basing EALs on directly observable plant instrumentation to the extent possible. Regardless of how quickly this calculation is initiated and completed, there will be a delay compared to making a simple observation of a predetermined reading on the radiation monitors. Although the delay is likely to be minimal in many situations, there is a delay nonetheless, and this delay could exceed the classification timeliness goal.

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<sup>2</sup> "ODCM" refers to the offsite dose calculation manual, which describes a licensee's program for demonstrating compliance with requirements and objectives related to the control of radioactive effluents.

- b. The current EAL 5.1.U.1 [5.1.A.1] includes an implicit timeliness requirement for completion of the dose calculation. In both the NRC-endorsed NUMARC-007 IC AU1 basis and the basis submitted by the licensee in its letter dated October 13, 1994 (upon which, in part, the NRC based its December 9, 1994, approval of Columbia's NUMARC-007 EAL implementation), if the monitor reading is sustained for greater than 60 [15] minutes and the required assessments cannot be completed within this period, the declaration must be made, based on a valid radiation monitor reading exceeding the predetermined threshold. The proposed EAL 5.1.U.1 [5.1.A.1] does not contain a comparable timeliness criterion, and is, therefore, unacceptable.<sup>3</sup>
- c. Although the NRC endorsed the use of "automatic real-time dose assessment capability" as an optional example EAL in NUMARC-007 IC AU1, this example EAL was seen as a supplement to rather than as a replacement for the example EAL based on radiation monitor readings. The specification of an "automatic real-time" capability was intentional, since it would be unlikely for a manually-initiated dose assessment to be started at the lower classification levels without some prior trigger (e.g., exceeding an effluent monitor EAL threshold or alarm). An automatic real-time assessment capability continuously monitors radiation monitor indications, plant parameters (such as flow rate) and meteorological data, performs dose calculations on a set periodicity, and alarms when the projected dose EAL threshold is exceeded. Such assessments are timely and require no user intervention other than to acknowledge the alarm and observe the displayed information as one would do with predetermined radiation monitor EAL thresholds. QEDPS does not operate in this manner.
- d. EN asserts that it has demonstrated the ability of its on-shift ERO to perform a QEDPS assessment within about 1 minute. Although the staff might expect such ERO performance in a training situation, the staff believes that expecting this performance during an actual emergency situation is overly optimistic, as it apparently does not reflect the high-priority collateral duties that the limited number of on-shift personnel may be called upon to perform during an actual emergency situation (e.g., fire brigade duties, medical/rescue, plant equipment operation outside of the control room, radiation protection coverage for such activities, etc.). These competing activities could reduce the availability of personnel designated to retrieve the necessary input data, perform the dose calculations, and process the results, thereby causing unnecessary delays in making emergency classifications.
- e. EN stated that the QEDPS users would input actual meteorology values. This is contrary to the annual average meteorology values called for by the endorsed NUMARC basis for this initiating condition. Although it could be argued that use of actual meteorology could provide a more accurate assessment of dose to the

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<sup>3</sup> It is significant to note that this stipulation does not provide a 60-minute [15-minute] dose calculation period in all situations. The dose calculation period runs concurrently with the release duration. For example, if the release is first identified after it has been in progress for more than 60 minutes [15 minutes], no further assessment is necessary and the classification is made on the bases of the valid radiation monitor reading exceeding the EAL threshold.

public, the absolute value of the projected dose is not an issue for this initiating condition. Instead, the initiating condition describes a loss of plant control in which a release exceeds licensee commitments made in the ODCM by a factor of 2 [200] and which cannot be terminated within 60 [15] minutes. The NUMARC basis provides that the annual average meteorology be used for setting EAL threshold readings since ODCM discharge permit calculations and release-specific alarm setpoints are similarly based on annual average meteorology. The annual average meteorology values could differ from the actual meteorology by one or more orders of magnitude. Depending on the value of the actual meteorology used, the QEDPS calculation results could be nonconservative or over-conservative as compared to the NUMARC initiating-condition basis. While under-classifications are an obvious concern, over-classifications may not be conservative if unnecessary public actions result. As a specific example, consider that a release authorized through an ODCM discharge permit, based on annual average meteorology, could be erroneously identified as exceeding the EAL threshold based upon a QEDPS calculation using actual meteorology. A planned radioactive release acceptable under the provisions of the ODCM does not constitute an emergency condition.<sup>4</sup>

- f. IC 5.1.U [5.1.A] applies to gaseous and liquid releases. However, QEDPS does not assess liquid releases and EN proposes to rely on sampling and analysis as the basis for classifying liquid releases. Typical ODCMs require that a release-specific radiation monitor alarm setpoint be established for each identified batch (and continuous) releases, with batch setpoints typically being based on pre-release sampling of the volume being released and with continuous releases being based on analysis of composite samples. A direct observation of a radiation monitor reading exceeding the ODCM alarm setpoint by a factor of 2 [200] is a ready and timely indication that the EAL threshold has been exceeded. Removal of the predetermined radiation monitor EAL thresholds in Table 3, would unacceptably delay classification until such time as the sample analysis identified in proposed Columbia EAL 5.1.U.1 [5.1.A.1] could be completed. In its application, EN argues that liquid doses are of little consequence as compared to gaseous releases. However, this position is incongruent with the NUMARC basis of the IC 5.1.U [5.1.A], which states that the existence of a release that exceeds licensee commitments (e.g., ODCM control) for an extended period of time is the concern, rather than a particular dose value.

### 3.2.3 Site Area and General Emergency (GE) EALs (GE-specific data enclosed in brackets)

Current: (IC 5.1.S) Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem [millirem] TEDE [total effective dose equivalent] OR 500 mrem thyroid CDE [committed equivalent dose] for the actual OR projected duration of the release.

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<sup>4</sup> See Appendix A of NEI-99-01 for a further discussion on these issues. This appendix was originally written in support of NUMARC-007 and the majority of its content is applicable to either classification scheme.

(IC 5.1.G) Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the emergency using actual meteorology.

(EAL 5.1.S.1 [5.1.G.1]) Offsite dose calculations cannot be performed AND a valid reading exists which exceeds or is expected to exceed Table 3 Column "Site Area" ["General"] for GT 15 minutes.

(EAL 5.1.S.2 [5.1.G.2]) Offsite dose calculations indicate offsite doses or dose rates GT Table 4 column "Site Area" ["General"] OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area" ["General"].

Proposed: (IC 5.1.S) Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release.

(IC 5.1.G) Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the emergency using actual meteorology.

(EAL 5.1.S.1 [5.1.G.1]) Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" ["General"] OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area" ["General"].

### 3.2.4 Staff Evaluation

The proposed change is the elimination of the current EAL 5.1.S.1 [5.1.G.1] and the referenced Table 3. As determined by EN, this proposed change would reduce the effectiveness of the plan since the change would eliminate data that the Columbia ERO currently relies upon to classify emergencies and would cause classifications to be based on the results of a manually-initiated dose assessment. As a result of its review, the staff finds the following:

- a. Staff evaluation findings designated a to d from Section 3.2.2 above are generally applicable here.
- b. Unlike IC 5.1.U and 5.1.A, the specific value of the projected dose is of interest to IC 5.1.S and 5.1.G, and the use of actual meteorology to perform dose calculations in QEDPS would be appropriate, but not as a replacement for the more ready and timely direct radiation monitor indications as EAL thresholds. Since the value of actual meteorology cannot be predicted ahead of time, the NUMARC-007 EAL basis provides for the use of annual average meteorology in establishing effluent monitor EAL threshold values. If a dose assessment using actual meteorology can be completed in 15 minutes, its results may be used in comparison to existing Columbia EAL 5.1.S.2 [5.1.G.2], otherwise, the observed monitor readings are used in existing Columbia EAL 5.1.S.1 [5.1.G.1].

- c. The staff continues to believe that emergency dose assessments have an important role in emergency assessment activities and may appropriately support emergency classification efforts if their use does not delay the classification. The results from emergency dose assessments can appropriately serve as the basis for escalating previously-declared emergency conditions. However, the availability of a manually-initiated dose assessment capability does not provide an adequate basis for elimination of predetermined radiation monitor EAL thresholds, since these monitor thresholds are often the first indications that a release has started, a determination that then triggers dose assessment. Dose calculations take more time than a direct observation that a radiation monitor reading exceeds a predetermined threshold.

#### 4.0 CONCLUSION

The NRC staff has concluded that the proposed change does not meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50, and, therefore, is unacceptable. The proposed change reduces the assurance that timely and accurate emergency classifications can and will be made, thereby impermissibly degrading the licensee's ability to take measures to adequately protect the public as required by the Commission's emergency preparedness regulations. The staff's conclusion was based on the following determinations: (1) the proposed change is inconsistent with timeliness expectations in EAL guidance in that it replaces predetermined, directly and readily observable EAL thresholds with manually-initiated dose calculations for which the analyst must manually retrieve and input necessary parameters, (2) the proposed change removes the explicit timeliness criterion for the dose assessment, (3) by substituting a dose threshold and using actual meteorology for the unusual event and alert EALs, the proposed changes are inconsistent with the NUMARC-007 initiating conditions and their bases, and (4) the elimination of the liquid effluent radiation monitor EAL thresholds will unacceptably delay the classification pending the results of manually-initiated sampling and analysis since the computer-based dose calculation does not address liquid releases.

#### 5.0 REFERENCES

1. Letter, S.K. Gambhir, Energy Northwest, to NRC, "Request for Emergency Plan Change," dated July 26, 2007.
2. Letter, S.K. Gambhir, Energy Northwest, to NRC, "Response to Request for Additional Information Related to Request for Emergency Plan Change," dated October 31, 2007.
3. Columbia EPIP-13.1.1, "Classifying the Emergency."
4. RG 1.101, "Emergency Response Planning and Preparedness for Nuclear Power Reactors."
5. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

6. NUMARC/NESP-007, "A Methodology for Development of Emergency Action Levels" (endorsed by RG 1.101).
7. Letter, R.A. Scarano, NRC, to G.C. Sorensen, WPPSS, "Review of the Washington Public Power Supply Nuclear Project Unit 2 (WNP-2) Emergency Preparedness Plan (EPP), Revision 11, and Emergency Plan Implementing Procedure (EPIP) 13.1.1, Revisions 13 and 14, dated June 30, 1992.
8. Letter, W.G. Council, WPPSS, to B.H. Falkenberry, NRC, "Response to the 1993 Systematic Assessment of Licensee Performance (SALP)," dated May 27, 1993.
9. Inspection Report 50-397/93-42, R.J. Pate, NRC, to J.V. Parrish, WPPSS, dated December 14, 1993.
10. Letter, J.V. Parrish, WPPSS, to R.J. Pate, NRC, "WNP-2 Emergency Plan Implementing Procedures, dated December 30, 1993.
11. Memo, J.L. Schnell, WPPSS, to Distribution, "WNP-2 Plant Procedures Manual – Volume 13, Package 93-07," dated January 13, 1993.
12. Letter, J.V. Parrish, WPPSS, to NRC, "Response to NRC Request for Additional Information Regarding WNP-2 Emergency Action Levels," dated October 13, 1994.
13. Letter, J.W. Clifford, NRC, to J.V. Parrish, WPPSS, "Emergency Action Level (EAL) Changes for the Washington Public Power Supply System Nuclear Project No.2 (WNP-2)(TAC No. M88504)," dated December 9, 1994.
14. Information Notice 85-50, "Timely Declaration of an Emergency Class."
15. Emergency Preparedness Position (EPPOS) -2, "Timeliness of Classification of Emergency Conditions."
16. NEI-99-01 Revision 4, "Methodology for Development of Emergency Action Levels."
17. NEI-99-02, "Regulatory Performance Indicator Guideline."
18. NRC Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process."

Principal Contributor: S. LaVie

Date: July 15, 2008