

April 16, 2002

Mr. J. V. Parrish
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SUBJECT: SAFETY EVALUATION OF COLUMBIA GENERATING STATION
PROPOSED EMERGENCY ACTION LEVELS (TAC NO. MB3882)

Dear Mr. Parrish:

By letter dated January 11, 2002, Energy Northwest Company submitted a proposed revision to the Columbia Generating Station emergency classification scheme to add emergency action levels (EALs) related to the operation of its Independent Spent Fuel Storage Installation. These EALs were submitted for NRC staff review and approval prior to implementation.

The staff has completed its review of the proposed EALs. We conclude the revised emergency classification scheme meets the requirements of 10 CFR 72.32(c), 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The basis for this conclusion is contained in the enclosed safety evaluation. You stated that State and local agreement was obtained regarding these EALs; therefore, implementation of the proposed revision is acceptable.

Sincerely,

/RA/

John Hickman, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure: Safety Evaluation

cc w/encl: See next page

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Columbia Generating Station

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
ON PROPOSED CHANGES FOR EMERGENCY ACTION LEVELS
ENERGY NORTHWEST
COLUMBIA GENERATING STATION
DOCKET NO. 50-397

1.0 INTRODUCTION

This safety evaluation addresses proposed changes to add emergency action levels (EALs) related to the operation of the Independent Spent Fuel Storage Installation (ISFSI) to the Columbia Generating Station emergency classification scheme. These proposed EALs were submitted to the NRC by Energy Northwest (the licensee) in a letter dated January 11, 2002. The licensee provided clarification to its submittal in a telecon on February 7, 2002.

2.0 BACKGROUND

2.1 Regulations

Section 72.32 of Title 10 of the Code of Federal Regulations (10 CFR) contains emergency planning requirements for ISFSIs. Subsection (c) of 10 CFR 72.32 states that: "For an ISFSI that is: (1) located on the site, or (2) located within the exclusion area as defined in 10 CFR Part 100, of a nuclear power reactor licensed for operation by the Commission, the emergency plan required by 10 CFR 50.47 shall be deemed to satisfy the requirements of this section."

Section 50.47(b)(4) of 10 CFR states, in part: "A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee..."

Section IV.B of Appendix E of 10 CFR Part 50 states, in part: "...These emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by the NRC..."

Appendix E, Subsection IV.C, of 10 CFR Part 50, states, in part: "action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as pressure in the containment and response of the Emergency Core Cooling System) for notification of offsite agencies shall be described...The emergency classes defined shall include (1) notification of unusual events, (2) alert, (3) site area emergency, and (4) general emergency..."

2.2 Guidance Documents

Regulatory Guide (RG) 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 2, states, in part: "The criteria and recommendations contained in Revision 1 of NUREG-0654/FEMA-REP-1 are considered by the NRC staff to be acceptable methods for complying with the standards in 10 CFR 50.47 that must be met in onsite and offsite emergency response plans."

NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," includes the following criteria for EALs:

- | | |
|----------------|---|
| Section II.D.1 | An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee. |
| Section II.D.2 | The initiating conditions shall include the example conditions found in Appendix 1 [of NUREG-0654]... |

RG 1.101, Revision 3, endorsed NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels," as an acceptable alternative to NUREG-0654 for developing EAL schemes.

NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees," is an NRC evaluation of the spectrum of potential accidents (and the potential consequences of these accidents) at an ISFSI.

RG 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities," contains the principal guidance for preparation of emergency plans for ISFSIs. The RG provides guidance for developing EALs for an ISFSI emergency plan which meets the requirements of 10 CFR 72.32(a).

Note: The Columbia Generating Station emergency plan is used for accidents which may occur at its ISFSI (as allowed in 10 CFR 72.32(c)). Therefore, RG 3.67 is not completely applicable to the Columbia Generating Station emergency plan.¹

¹For example, 10 CFR 72.32(a) (concerning ISFSI emergency plans) specifies that EALs be provided for classifying events as Alerts. However, Appendix E to 10 CFR Part 50 (concerning operating plant emergency plans) specifies that EALs be provided for classifying events at four classification levels depending on the seriousness of the event. The RG 3.67 definition of (and emergency response actions associated with) the Alert classification for an ISFSI-specific emergency plan is different than that for an operating plant emergency plan. These differences were considered in the evaluation of the Columbia Generating Station EALs.

3.0 EVALUATION

The staff utilized the following criteria for determining the acceptability of the licensee's EALs for its ISFSI:

- (1) EALs were provided for initiating emergency classification for the spectrum of accidents considered possible at the ISFSI.
- (2) The classification level (e.g., Notification of Unusual Event) of the EALs is appropriate. In other words, the level of degradation of safety of the plant, as reflected in the EAL, is consistent with the classification level.
- (3) The new EALs have been integrated into the existing EAL scheme.

The staff also used the guidance on EALs for ISFSIs contained in RG 3.67. The staff's evaluation of each of the licensee's ISFSI EALs is described below:

3.1 EAL 8.1.U.1-- Unexpected Increase in ISFSI Radiation

EAL 8.1.U.1 reads as follows:

Valid radiation reading for irradiated spent fuel in dry storage GT 2 times the ISFSI Technical Specification limits.

The licensee's EAL uses abnormal radiation readings as an indication that an event representing a potential degradation in safety has occurred at the ISFSI. The staff concludes the radiation reading greater than two times the ISFSI technical specification limit(s) is appropriate for classifying this event at the ISFSI.

3.2 EAL 8.1.U.2-- Damage to a Loaded Cask Confinement Boundary

EAL 8.1.U.2 reads as follows:

Any of the following conditions:

- 1) *Natural phenomena events affecting a loaded cask confinement boundary:*
 - Fire*
 - Tornado*
 - Flood*
 - Earthquake*
 - Explosion*
 - Lightning*
 - Complete SFSC air inlet blockage*
 - Burial under debris*
 - Extreme environmental temperature*

OR,

- 2) *Accident conditions affecting a loaded cask confinement boundary:*
Cask handling accident (e.g., drop)
Cask tip-over

OR,

- 3) *Any condition, in the opinion of the Emergency Director, that indicates a loss of loaded fuel storage cask confinement boundary.*

The licensee included EALs to address environmental phenomena or external events which may damage the cask confinement boundary. The casks are designed to prevent confinement boundary damage due to these types of events. However, if an event of this nature were to cause cask confinement damage it would represent a potential degradation in the level of safety of the plant.

The licensee also included EALs which represent mishandling of the cask which may result in the release of radioactive material due to damage of the cask confinement boundary. The casks are designed to prevent confinement boundary damage in case of mishandling. However, if damage were to occur, this event represents a potential degradation in the level of safety of the plant.

The staff concludes that the classification of a Notification of Unusual Event is appropriate.

3.3 EAL 8.1.U.3-- Confirmed Security Event with Potential Loss of Level of Safety of the ISFSI

EAL 8.1.U.3 reads as follows:

Security event as identified by the Physical Security Plan and confirmed by on shift security supervision.

The licensee included EALs for physical security events which could damage the cask confinement boundary. If an event of this nature did cause cask confinement damage it would represent a potential degradation in the level of safety of the plant. Therefore, the staff concludes that a Notification of Unusual Event classification is appropriate

3.4 Classification Level and Integration into Existing EAL Scheme

NUREG-1140 indicates that the postulated worst-case accident involving an ISFSI has insignificant consequences to the public health and safety and that no release of radioactive material requiring offsite response or monitoring is anticipated. The licensee's EALs specific to operations and hazards at its ISFSI are limited to the Notification of Unusual Event classification level. However, the existing EAL scheme for Columbia Generating Station includes EALs (e.g., radioactivity release or emergency director judgement) at higher emergency classification levels which would also apply to events at the ISFSI.

The staff concludes that the ISFSI-specific EALs classified at the Notification of Unusual Event level are adequate to cover postulated accidents at the ISFSI.

The licensee stated that the implementation of the ISFSI EALs require that the EAL Table in the Emergency Plan be re-numbered to incorporate the new EALs without deleting existing EALs.

The staff concludes that this is an acceptable manner for integrating the new EALs into the existing EAL scheme.

4.0 STATE AND LOCAL GOVERNMENTAL AGREEMENT

In its January 11, 2002, letter, the licensee stated that these proposed EALs were discussed and agreed upon by the licensee and State and local governmental authorities as required by Section IV.B of Appendix E of 10 CFR Part 50.

5.0 CONCLUSION

The staff concludes that the EALs proposed for the Columbia Generating Station ISFSI are consistent with the applicable guidance of RG 1.101 and RG 3.67. The proposed EALs are adequate to classify potential events at the ISFSI at the Columbia Generating Station. The EALs are appropriately classified at the Notification of an Unusual Event level and have been adequately integrated into the Columbia Generating Station EAL scheme. Therefore, the staff concludes that the proposed revised EAL scheme meets the requirements of 10 CFR 72.32(c), 10 CFR 50.47(b)(4) and Appendix E to 10 CFR Part 50.

Principal Contributor: T. Blount, NRR

Date: April 16, 2002