

November 9, 2005

Mr. David A. Christian  
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SUBJECT: MILLSTONE POWER STATION, UNIT NO. 2 - CORRECTION OF THE  
SAFETY EVALUATION TO AMENDMENT REGARDING SELECTIVE  
IMPLEMENTATION OF ALTERNATE SOURCE TERM (TAC NO. MB6479).

Dear Mr. Christian:

By letter dated September 20, 2004, the Nuclear Regulatory Commission (NRC) issued Amendment No. 284 to Facility Operating License No. DPR-65 for the Millstone Power Station, Unit No. 2. The amendment incorporated technical specification changes requested by Dominion Nuclear Connecticut, Inc. The changes were based on a re-analysis of fuel handling accidents. The re-analysis of these accidents were based on selective implementation of the alternative source term methodology.

The Safety Evaluation (SE) enclosed with Amendment No. 284 contained administrative or typographical errors on Table 1 and pages 13 and 17. Therefore, the NRC is enclosing the corrected SE pages 13 and 17 and Table 1.

We regret any inconvenience this may have caused. If there are any further questions, please contact me at (301) 415-1484 or [vxm@nrc.gov](mailto:vxm@nrc.gov).

Sincerely,

**/RA/**

Victor Nerses, Senior Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: As stated

cc w/encls: See next page

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controls provide an important element of defense-in-depth and assure that the licensee will manage the consequences of an FHA in a manner that will afford adequate protection to the public.

3.4.4.2 The licensee proposes to change LCO a. from "The equipment door closed and held in place by a minimum of four bolts," to "The equipment door closed or capable of being closed under administrative control,\*". In the May 7, 2004, supplemental letter, the licensee revised the phrase, "The equipment door closed or capable of being closed under administrative control,\*" to state that "The equipment door shall be either: 1. closed and held in place by a minimum of four bolts, or 2. open under administrative control\* and capable of being closed and held in place by a minimum of four bolts."

The licensee states that the "revised FHA Analyses assumes that all of the radioactive material which could be released to the containment atmosphere exits the containment within two (2) hours of accident initiation with no credit taken for the containment boundary closure." As a consequence, the containment isolation is no longer on the primary success path of a DBA. Thus, the requirement for an LCO based on Criterion 3 of 10 CFR 50.36 does not apply.

The licensee proceeds to state that "Consistent with the philosophy of minimizing dose released to the environment, administrative controls will be established to ensure that the equipment access hatch, and other containment penetrations which provide direct access to the outside atmosphere, can be closed within 30 minutes of accident initiation as a defense-in-depth measure to minimize the consequences of a[n] FHA."

The licensee states that the "containment atmosphere is monitored during normal and transient operations of the reactor plant by the containment structure particulate and gas monitor located in the upper level of the Auxiliary Building or by grab sampling." The licensee also agrees that since this proposed change will allow containment penetrations to be open under administrative control for extended periods of time during refueling outages, routine grab samples of the containment atmosphere, the equipment access hatch and personnel access hatch will be required. The NRC staff confirms that the use of existing monitors along with the use of grab samples taken at the appropriate locations would provide sufficient monitoring to comply with the provisions of proposed GDC 17 (similar to GDC 64).

The NRC staff also considered the implications of the proposed change on GDC 61 (or corresponding proposed GDC) which requires appropriate containment, confinement, and filtering of radioactive contaminants in areas where fuel is stored. The staff considers the licensee's commitment to administrative controls which close the equipment hatch, terminate the purge, and isolate the containment as satisfying the requirements of proposed GDCs 69 and 70 (the combination of which is similar to GDC 61) and minimize any potential release to the public.

The NRC staff concurs that having the containment penetrations open during refueling reduces defense-in-depth and that closing the penetrations provides an additional measure of protection to the public. The administrative controls (proposed by the licensee as a footnote to TS 3.9.4) to close the containment in 30 minutes with designated personnel after an FHA compensate for the reduction in defense-in-depth. The NRC staff has determined that these administrative controls provide an important element of defense-in-depth and assure that the licensee will

The NRC staff's finding of acceptability for this item is only associated with the removal of the item from the TSs. Prior to removing any equipment or changing any procedure affecting the operation of engineering safeguards equipment, the licensee must use the appropriate modification process (10 CFR 50.59 or 10 CFR 50.90) to assure that the facility complies with all other commitments including GDC (or corresponding proposed GDC) as stated in 10 CFR Part 50 Appendix A, or their equivalents, that the appropriate changes are made to the facility UFSAR and that defense-in-depth and safety margins are adequate. The licensee has stated that "procedural guidance will be implemented for closing spent fuel pool area atmosphere boundary penetrations if a[n] FHA occurs inside the spent fuel pool." The use of this procedural guidance will be implemented "as a defense in depth measure to minimize actual releases to the outside atmosphere much lower than assumed in the AST FHA analyses dose calculations." The NRC staff concurs that the development and implementation of procedural guidance will increase defense-in-depth and facilitate managing releases during an FHA. As such, it will provide increased protection to public health and safety.

The effect of this proposed change is to allow movement of irradiated fuel without the need to satisfy current requirements for spent fuel area integrity, storage pool area ventilation system, and operability of an enclosure building filtration train. In performing the re-analyses of the FHAs and spent fuel cask drop accidents, DNC did not credit any filtration, holdup, or dilution prior to release to the environment during a DBA FHA. Since the operability of the design features is no longer assumed as an initial condition in a DBA analysis, the requested changes are acceptable with regard to DBA radiological consequences.

#### 4.0 SUMMARY

As described above, the NRC staff reviewed the assumptions, inputs, and methods used by DNC to assess the radiological impacts of the proposed license amendment at MP2. The staff finds that DNC used analysis methods and assumptions consistent with the conservative regulatory requirements and guidance identified in Section 2.0 above. The NRC staff compared the doses estimated by DNC to the applicable criteria identified in Section 2.0. The staff finds, with reasonable assurance, that the licensee's estimates of the EAB, LPZ, and control room doses will continue to comply with these criteria. Therefore, the proposed license amendment is acceptable with regard to the radiological consequences of postulated DBAs.

This licensing action is considered a selective implementation of the AST. With this approval, the selected characteristics of the AST and TEDE criteria become the design basis for the DBA FHA within the CNMT and outside the CNMT. This approval is limited to this specific implementation. Subsequent modifications, based on the selected characteristics incorporated into the design basis by this action, may be possible under the provisions of 10 CFR 50.59. However, use of other characteristics of an AST, and changes to previously approved AST characteristics, requires prior NRC staff approval pursuant to 10 CFR 50.67. The selected characteristics of the AST and the TEDE criteria may not be extended to other aspects of the plant design or operation without prior NRC review, pursuant to 10 CFR 50.67. All future FHA radiological analyses performed to demonstrate compliance with regulatory requirements shall address the selected characteristics of the AST and the TEDE criteria as described in the MP2 design basis.

The proposed changes to the TSs identified in Section 3.4 were reviewed by the NRC staff and found to be in compliance with NRC's regulations. Thus, the licensee may implement these

Release period	100% over 2 hours
Hold-up & release mitigation	No credit taken
Release via:	Enclosure building edge
Control room isolation, sec	10
Atmospheric dispersion, sec/m <sup>3</sup>	
EAB	3.66E-4
LPZ	4.80E-5
Control Room	5.46E-3
Release chemical form, percent	
Elemental	57
Organic	43

*\* Applicable to FHA inside CNMT and inside spent fuel pool area*

#### **Spent Fuel Cask Drop Accident\***

Fuel assemblies damaged	
One year decay	184
Five-year decay	1376
Fraction of core in gap	
I-129	0.10
Kr-85	0.30
Pool decontamination factor	200
Release period	100% over 2 hours
Hold-up & release mitigation	No credit taken
Release via:	Enclosure building edge
Control room isolation, sec	No credit taken
Atmospheric dispersion, sec/m <sup>3</sup>	
EAB	3.66E-4
LPZ	4.80E-5
Control Room	5.46E-3
Release chemical form, percent	
Elemental	57
Organic	43