



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 10, 2010

Mr. S. K. Gambhir, Vice President,
Technical Services
Columbia Generating Station
Energy Northwest
MD PE04
P. O. Box 968
Richland, WA 99352

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
COLUMBIA GENERATING STATION LICENSE RENEWAL APPLICATION –
SAMA REVIEW (TAC NO. ME3121)

Dear Mr. Gambhir:

By letter dated January 19, 2010, Energy Northwest submitted an application to the U.S. Nuclear Regulatory Commission (NRC) to renew operating license NPF-21 for Columbia Generating Station pursuant to Title 10 of the *Code of Federal Regulations* Part 54. The NRC staff is reviewing the information contained in the license renewal application and the associated Environmental Report. The staff has identified, in the enclosure, areas where additional information is needed to complete the Severe Accident Mitigation Alternatives (SAMA) review. Further requests for additional information may be issued in the future.

Items in the enclosure were discussed with Mr. Abbas Mostala. A mutually agreeable date for the response is within 60 days from the date of this letter. If you have any questions, please contact me at 301-415-3748 or by e-mail at daniel.doyle@nrc.gov.

Sincerely,

A handwritten signature in cursive script that reads "Daniel Doyle".

Daniel Doyle, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure:
As stated

cc w/encl: Distribution via Listserv

Request for Additional Information
Regarding the Analysis of Severe Accident Mitigation Alternatives
for the Columbia Generating Station License Renewal Review

Background:

The NRC issued a previous request for additional information (RAI) related to the Severe Accident Mitigation Analysis (SAMA) review to Energy Northwest by letter dated July 1, 2010 (ADAMS Accession Number ML101760421). Energy Northwest provided a partial response to the RAIs by letter dated September 17, 2010 (ADAMS Accession Number ML102660151).

The purpose of this request for additional information is to provide clarification on Energy Northwest's partial response (referred to in this document as "the response") dated September 17, 2010.

RAI 3.d(i)-1

The response states that the "electronic database used to select and locate cables does not include all conduit locations," and that "most, but not all" of the multiple spurious equipment operations (MSOs) that may need to be modeled have been captured and that, for those not captured, the response to RAI 6.j will account for the incompleteness. The response continues to the conclusion that "model incompleteness is judged to be encompassed by the provided sensitivity analysis," which includes the use of a 95th percentile uncertainty band on the base fire core damage frequency (CDF). (The response to RAI 6.j further cites sensitivity analysis via the 95th percentile approach.) As Columbia estimates a fire CDF using an analysis that goes beyond the typical fire individual plant examination – external events (IPEEE), enhancements to reduce potential conservatisms, as well as enhancements to remove potential non-conservatisms, that might exist in an IPEEE-like estimate of fire CDF should be present. For example, source-target-specific fire scenarios should have been used in lieu of more conservative assumptions of total room burn-up; and hot short probabilities typically of at least 0.3 should have been assumed in lieu of potentially non-conservative lower values. Please describe these enhancements, including those used with regard to compensating for any incompleteness in the cable location database and modeling of MSOs as cited in the response.

ENCLOSURE

RAI 6.j-1

- i. The uncertainty analysis presented in response to this RAI did not re-evaluate the Phase 1 SAMAs using the maximum uncertainty benefit (from eliminating all internal and external risk) from applying the uncertainty factors provided in Table 6.j-1. Specifically, the maximum baseline benefit in the ER is reported to be \$1.9M, while applying the Table 6.j-1 uncertainty factors would increase the maximum benefit to \$5.6M (NRC staff estimate). Provide an assessment of each Phase 1 SAMA eliminated using Screening Criterion D and E to determine whether any Phase 1 SAMAs originally screened should have a Phase 2 cost-benefit evaluation performed. Provide a Phase 2 cost-benefit evaluation for any SAMA not screened.

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/RA/

Daniel Doyle, Project Manager
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ADAMS Accession No. ML102870984

OFFICE	PM:RPB1:DLR	LA:DLR	BC:RPB1:DLR	PM:RPB1:DLR
NAME	DDoyle	YEdmonds	BPham	DDoyle
DATE	11/05/10	10/25/10	11/05/10	11/10/10

OFFICIAL RECORD COPY

Letter to S. Gambhir from D. Doyle dated November 10, 2010

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