June 9, 2011

Frederick P. Schiffley
BWROG Chairman
Exelon Generation Co., LLC
Cornerstone II at Cantera
4300 Winfield Road
Warrenville, IL 60555

Subject: FEEDBACK ON BWROG-11018, "BWROG ECCS SUCTION STRAINER DRAFT SURVEYS ON HEADLOSS AND UNQUALIFIED COATINGS"

Dear Mr. Schiffley:

By letter dated April 7, 2011, Agencywide Documents Access and Management System (ADAMS) Accession No. ML110980600, the Boiling Water Reactor (BWR) Owner's Group (BWROG) submitted for U.S. Nuclear Regulatory Commission (NRC) staff informal review and feedback BWROG-11018, "BWROG ECCS [Emergency Core Cooling System] Suction Strainer Draft Surveys on Headloss and Unqualified Coatings," which identifies milestones in the BWROG's program plan to resolve the NRC staff concerns related to suction strainer performance during a loss-of-coolant accident. The NRC staff has reviewed the draft surveys enclosed with the letter and provides the following feedback for the BWROG's consideration:

- Regarding the Survey on Assessment of Coatings; this survey is aligned with the March 2008, NRC Staff Review Guidance document dated March 2008(ADAMS Accession No. ML080230462), in the area of coatings evaluation. The NRC staff has no comments on this survey.

- Regarding the survey on Head Loss and Near-Field Effects, the staff's comments are enclosed.

If you have any questions regarding this matter, please contact Joe Golla at 301-415-1002 or at joe.golla@nrc.gov.

Sincerely,

**/RA/**

John R. Jolicoeur, Chief
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 691

Enclosure: As stated

cc w/encl: See next page

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**U.S. Nuclear Regulatory Commission Staff Comments**

**on Head Loss and Near-Field Effects Survey**

Questions 2/7/9
The survey may want to consider whether the plant specific testing or testing to support the correlation included the coating materials in the form predicted to reach the strainer.

Question 5
The U.S. Nuclear Regulatory Commission (NRC) staff Safety Evaluation (SE) on both the General Electric correlation for strainer head loss and the Utility Resolution Guide stated that non-insignificant contributions from fibrous debris and reflective metallic insulation should not be ignored, therefore, the survey may want to specifically explore whether the postulated debris loads include both RMI and fibrous debris beds or if one of these was ignored. If one was ignored, the survey may want to explore the magnitude of the head loss associated with this debris bed. For example:

If head loss associated with RMI or fiber was ignored, the survey could explore whether both RMI and fibrous debris can reach the strainer based on a single break location.

If both RMI and fibrous debris can reach the strainer from a single break, the survey may want to explore how the head losses from each component are treated. If one was ignored, an explanation as to why may make the circumstances clear.

Question 9
The survey may want to elicit some description of the range of sizes and other relevant characteristics of the debris surrogates used in the head loss testing. Photographs of the prepared surrogates, if available, would be helpful.

The survey may want to question the order in which each debris surrogate was added to the test and whether it was added mixed with other debris or separately.

The survey may want to explore whether the debris was mixed in water prior to adding to the test and if possible the amount of debris per unit of water.

Question 10
It may be helpful to reword Part a. to ask whether the tests were designed to ensure the transport of the majority of debris to the strainer. Some small amount of debris will settle even if the test is well agitated. It may be useful to clarify whether Part b. only applies to plant specific tests or also applies to tests for correlations.

Question 12
It may be useful to determine whether flow sweeps were conducted to determine whether the flow across the debris bed was laminar or head loss was affected by gaps in the debris bed. If the flow is laminar a head loss correction for temperature based on viscosity is justified. If gaps occur in the debris bed during testing, differential pressure may be limited by debris bed breakdown and temperature corrections may not be justified.

Question 13
It may be useful to reword Part f. to ask if tests were based on equivalent debris load per unit of strainer area. For particulate debris it may be hard to calculate a theoretical thickness.

ENCLOSURE