Release IN FULL

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

July 8, 2003

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: [redacted] LICENSED THERMAL POWER, BYRON STATION, UNIT 1- REQUEST FOR ADDITIONAL INFORMATION (TAC NO. MB7378)

Dear Mr. Skolds:

The Nuclear Regulatory Commission (NRC) staff is reviewing the February 5, 2003, response of Exelon Company, LLC (Exelon), to the NRC's letter of January 22, 2003. During the review, the staff has determined that it requires additional information in order to fully resolve the question of the licensed power limit for Byron Station, Unit 1. The request for additional information (RAI) is attached.

Based on a discussion of the questions with Exelon staff members on June 20, 2003, we request that the response to the attached RAI be received by August 15, 2003.

Sincerely,

George F Dick Jr

George F. Dick, Jr., Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. STN 50-454

Enclosure: As stated

cc w/encl: See next page

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Byron Station Units 1 and 2

cc:

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, IL 62704

Document Control Desk-Licensing
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Ms. C. Sue Hauser, Project Manager
Westinghouse Electric Corporation
Energy Systems Business Unit
Post Office Box 355
Pittsburgh, PA 15230

Joseph Gallo
Gallo & Ross
1025 Connecticut Ave., NW, Suite 1014
Washington, DC 20036

Howard A. Learner
Environmental Law and Policy
Center of the Midwest
35 East Wacker Drive
Suite 1300
Chicago, IL 60601-2110

U.S. Nuclear Regulatory Commission
Byron Resident Inspectors Office
4448 North German Church Road
Byron, IL 61010-9750

Ms. Lorraine Creek
RR 1, Box 182
Manteno, IL 60950

Chairman, Ogle County Board
Post Office Box 357
Oregon, IL 61061

Mrs. Phillip B. Johnson
1907 Stratford Lane
Rockford, IL 61107

Attorney General
500 S. Second Street
Springfield, IL 62701

Byron Station Manager
Exelon Generation Company, LLC
4450 N. German Church Road
Byron, IL 61010-9794

Site Vice President - Byron
Exelon Generation Company, LLC
4450 N. German Church Road
Byron, IL 61010-9794

Senior Vice President - Nuclear Services
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Vice President
Mid-West Operations Support
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Senior Vice President
Mid-West Regional Operating Group
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Chairman
Will County Board of Supervisors
Will County Board Courthouse
Joliet, Illinois 60434

Illinois Emergency Management Agency
Division of Disaster Assistance &
Preparedness
110 East Adams Street
Springfield, Illinois 62701-1109

Director Licensing
Mid-West Regional Operating Group
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Regulatory Assurance Manager - Byron
Exelon Generation Company, LLC
4450 N. German Church Road
Byron, IL 61010-9794

Senior Counsel, Nuclear
Mid-West Regional Operating Group
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Vice President
Licensing and Regulatory Affairs
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Manager Licensing - Braidwood and Byron
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

REQUEST FOR ADDITIONAL INFORMATION

RELATED TO THE BYRON UNIT 1, THERMAL POWER LIMIT

EXELON GENERATION COMPANY, LLC

BYRON STATION, UNIT 1

DOCKET NO. STN 50-454

The NRC staff is reviewing the licensee's response of February 5, 2003, to the NRC's letter of January 22, 2003. During the review, the staff has determined that it requires additional information in order to fully resolve the question of the licensed power limit for Byron Station, Unit 1. The staff's questions or information needs are as follows:

1. Questions specific to the licensee's February 5, 2003, submittal

1.1 On Page 2 and on Page 5, the licensee identified participation by other than on-site personnel in such activities as detailed review of the installation and re-evaluation of the installation uncertainty calculations of the ultrasonic flow meters (UFMs). Please provide the basis for concluding, "that the equipment was performing within specification."

1.2 On Page 9, the licensee identified a MWe evaluation and toward the end of the letter, discussed other parameters associated with the plant secondary side. Please provide a description of observations and conclusions obtained during those or any other evaluations, including any items that may be consistent with a thermal power level being greater than 100 percent. Include any observations relative to the turbine/alternator performance, including but not limited to the overall conversion efficiency of the turbine generator with the assumption that the plant is operating at 100 percent thermal power.

2. Questions related to the feedwater flow meters

2.1 Included in topical reports Westinghouse has submitted affirming the accuracy of the AMAG CrossFlow ultrasonic flowmeter at a number of nuclear power plants, are comparisons of feedwater flow readings from the UFM with simultaneous readings from the installed venturi-based FW flow meters. Westinghouse notes that the FW venturis tend to defoul upon return to power following an outage, and that the UFM accuracy can, therefore, be confirmed immediately following start-up.

Please provide all available data showing simultaneous readings or correction factor computations for the venturis and the UFMs upon return to power or at other times when the venturis were known to be clean. Please provide the data, showing the degree of correlation between the two types of flowmeters. If such data do not exist, please provide the staff with information regarding how the data will be obtained. If simultaneous measurements are proposed, the venturi delta-P instruments should be calibrated before taking data, or supplemented with laboratory-grade devices. Please include uncertainty evaluations for the data measurement and acquisition equipment for both the existing data and new data.

2.2 Please provide a complete description of the methodology used to calculate the correction factors. Include the behavior as a function of power.

2.3 Fluctuations in the CF for Byron appear to be greater than at other plants. It was recommended by Westinghouse to run continuous UFM monitoring for a period of six months to possibly identify the root cause of the fluctuations. Please describe how the CF fluctuations at Byron compared with the CF fluctuations at Braidwood, and how indicated power is affected by the level of CF fluctuation. Describe actions that have been taken in response to the Westinghouse recommendation and what was found to be the root cause of this condition. Discuss the status of corrective actions to resolve this condition, and how the CF fluctuations currently compare between the Byron and Braidwood units.

3. Question related to the quality of the calorimetric calculations

Provide information for Byron and Braidwood Stations regarding the methodology of the plants' calorimetric calculations, as well as calibration and uncertainty information for the instrumentation that is used as input to the calorimetric calculation. Include any changes in this information as a result of implementing the power uprate for the units and implementing the UFM for feedwater flow measurement.

4. Questions related to other secondary side equipment

4.1 Describe and explain any changes in the turbine efficiencies at Byron prior to and following UFM implementation. Provide the same type of information for Braidwood. Also describe and explain any differences in turbine efficiencies between the Byron and Braidwood units prior to and following UFM implementation.

4.2 Describe and explain any differences in the turbine governor and throttle valves between the Byron and Braidwood units. Were these valves originally purchased as identical valves for Byron and Braidwood?

4.3 Were any modifications made to the turbine governor or throttle valves (or to the turbines) prior to, in conjunction with, or subsequent to power uprate?