

February 21, 2001

Mr. Oliver D. Kingsley, President
Exelon Nuclear
Exelon Generation Company, LLC
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE TO REVISE THE APPLICABILITY OF TECHNICAL SPECIFICATION 3.3.9, "BORON DILUTION PROTECTION SYSTEM (BDPS) FOR BYRON STATION, UNITS 1 AND 2, AND BRAIDWOOD STATION, UNITS 1 AND 2 (TAC NOS. MA9385, MA9386, MA9383, AND MA9384)

Dear Mr. Kingsley:

In a letter of June 19, 2000, Exelon Generation Company, LLC (previously Commonwealth Edison Company) requested amendments to the Byron and Braidwood Stations' operating licenses which would revise the technical specifications (TS) requirements associated with the Boron Dilution Protection System (BDPS) to make them applicable only until the respective unit's next refueling outage. After the refueling outage, the units would rely on an alternative "system" of new alarms, indicators, procedures and controls and the operators to mitigate boron dilution events. The key aspect of the licensee's proposed alternative is that the additional alarms and indicators would not be covered by technical specifications. The licensee referenced license amendments that have been previously approved by the Nuclear Regulatory Commission (NRC) for two other plants. A similar amendment request has been made by the licensee for Callaway.

On January 25, 2001, a telephone conversation was held on the above subject among the licensee for Callaway, Exelon, and the NRC. The subject of discussion was inclusion of the additional alarms and indications in technical specifications in accordance with 10 CFR Part 50.36. The licensee argued that these additional alarms are not part of the "primary success path" and therefore do not meet Criterion 3 of 10 CFR Part 50.36(c)(2)(ii). The "primary success path" was defined by the licensee as operator action only and alarms and indications play a secondary role by providing additional information which an operator would use to perform an action. Moreover, a single alarm or indication cannot be listed as part of the "primary success path" since there are additional alarms and indications which an operator might use. TSTF 110, Rev. 2, was cited as a precedent for removing certain alarms from the technical specifications.

The staff disagrees in part with the licensee position because according to your analysis, these additional alarms play a key role in mitigating rapid boron dilution events and there is no other backup actuation system. Therefore, these additional alarms are part of the "primary success path" since an operator action combined with the alarms and indications is a substitute for an automatic action by BDPS for the scenarios where there is inadequate time for operator diagnosis using other alarms and indications. Also, the alarms cited in TSTF 110 are not analogous to this situation; they do not serve the Criterion 3 purpose. The staff also reviewed "Inadvertent Boron Dilution Events (Generic Letter 85-05)," which is very clear on the need for a dedicated alarm to mitigate boron dilution accidents. The staff also understands the licensee's statements that the impact of a dilution accident is not believed to be high and is probably self-limiting in many cases.

After full consideration, staff believes that the new volume control tank (VCT) alarm channels must be in the technical specifications in accordance with Criterion 3 of the limiting condition for operation (LCO) portion of 50.36. The staff regrets the impact on licensee planning due to incomplete precedents which shaped the current submittals and expectations. The following considerations are required for the new hardware which will replace BDPS in order to satisfy technical specifications requirements in accordance with 10 CFR Part 50.36 criteria:

1. All hardware which is required to mitigate fast dilution events through operator action in less than 15 minutes is part of the "primary success path" and therefore shall be included in TS per 10 CFR Part 50.36(c)(2)(ii)(C), Criterion 3.
2. For slow dilution events (taking at least 30 minutes to develop as discussed in your analysis), the operator diagnoses and mitigates the event using a range of existing instrumentation. No additional specifications for the range of alarms used for diagnosis are required.
3. In addition, as stated in the June 19, 2000, submittal, the requirements that a reactor coolant pump (RCP) pump be running and all loop stop valves are open are operating restrictions. Being initial conditions of a design basis accident, these restrictions meet 10 CFR Part 50.36(a)(2)(ii)(B), Criterion 2, and therefore, are required to be in TS with appropriate LCO action statements.

Please contact me at (301) 415-3871 if there are questions.

Sincerely,

/RA/

Mahesh Chawla, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454, STN 50-455
STN 50-456, and STN 50-457

cc: See next page

The staff disagrees in part with the licensee position because according to your analysis, these additional alarms play a key role in mitigating rapid boron dilution events and there is no other backup actuation system. Therefore, these additional alarms are part of the "primary success path" since an operator action combined with the alarms and indications is a substitute for an automatic action by BDPS for the scenarios where there is inadequate time for operator diagnosis using other alarms and indications. Also, the alarms cited in TSTF 110 are not analogous to this situation; they do not serve the Criterion 3 purpose. The staff also reviewed "Inadvertent Boron Dilution Events (Generic Letter 85-05)," which is very clear on the need for a dedicated alarm to mitigate boron dilution accidents. The staff also understands the licensee's statements that the impact of a dilution accident is not believed to be high and is probably self-limiting in many cases.

After full consideration, staff believes that the new volume control tank (VCT) alarm channels must be in the technical specifications in accordance with Criterion 3 of the limiting condition for operation (LCO) portion of 50.36. The staff regrets the impact on licensee planning due to incomplete precedents which shaped the current submittals and expectations. The following considerations are required for the new hardware which will replace BDPS in order to satisfy technical specifications requirements in accordance with 10 CFR Part 50.36 criteria:

1. All hardware which is required to mitigate fast dilution events through operator action in less than 15 minutes is part of the "primary success path" and therefore shall be included in TS per 10 CFR Part 50.36(c)(2)(ii)(C), Criterion 3.
2. For slow dilution events (taking at least 30 minutes to develop as discussed in your analysis), the operator diagnoses and mitigates the event using a range of existing instrumentation. No additional specifications for the range of alarms used for diagnosis are required.
3. In addition, as stated in the June 19, 2000, submittal, the requirements that a reactor coolant pump (RCP) pump be running and all loop stop valves are open are operating restrictions. Being initial conditions of a design basis accident, these restrictions meet 10 CFR Part 50.36(a)(2)(ii)(B), Criterion 2, and therefore, are required to be in TS with appropriate LCO action statements.

Please contact me at (301) 415-3871 if there are questions.

Sincerely,

/RA/

Mahesh Chawla, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454, STN 50-455
STN 50-456, and STN 50-457

DISTRIBUTION:

PUBLIC	ACRS
PD3-2 r/f	MJordan, RIII
OGC	JDonohew

*See Previous Concurrence Sheet

OFFICE	PM:LPD3-2	PM:LPD3-2	LA:LPD3-2	SC:RTSB	SRXB	SC:LPD3-2
NAME	MChawla	*GDick	THarris	RDenning	*FAkstulewiz	AMendiola
DATE	2/21/01	2/20/01	2/21/01	2/21/01	2/20/01	2/21/01

DOCUMENT NAME: C:\BDPS_50.36.wpd

OFFICIAL RECORD COPY

O. Kingsley
Exelon Generation Company

Byron/Braidwood Stations

cc:

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

Attorney General
500 S. Second Street
Springfield, Illinois 62701

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

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

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

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

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

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

U.S. Nuclear Regulatory Commission
Braidwood Resident Inspectors Office
35100 S. Rt. 53, Suite 79
Braceville, Illinois 60407

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

Mr. Ron Stephens
Illinois Emergency Services
and Disaster Agency
110 E. Adams Street
Springfield, Illinois 62706

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

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

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

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

Exelon Generation Company, LLC
Braidwood Station Manager
35100 S. Rt. 53, Suite 84
Braceville, Illinois 60407-9619

George L. Edgar
Morgan, Lewis and Bockius
1800 M Street, NW
Washington, DC 20036-5869

O. Kingsley
Exelon Generation Company, LLC

- 2 -

Byron/Braidwood Stations

Ms. Bridget Little Rorem
Appleseed Coordinator
117 N. Linden Street
Essex, Illinois 60935

Exelon Generation Company, LLC
Reg. Assurance Supervisor - Braidwood
35100 S. Rt. 53, Suite 84
Braceville, Illinois 60407-9619

Document Control Desk-Licensing
Exelon Generation Company, LLC
1400 Opus Place, Suite 400
Downers Grove, Illinois 60515

Exelon Generation Company, LLC
Reg. Assurance Supervisor - Byron
4450 N. German Church Road
Byron, Illinois 61010-9794

Exelon Generation Company, LLC
Site Vice President - Braidwood
35100 S. Rt. 53, Suite 84
Braceville, Illinois 60407-9619

Mr. Edward J. Cullen
Vice President, General Counsel
300 Exelon Way
Kennett Square, PA 19348

Mr. William Bohlke
Sr. Vice President, Nuclear Services
Exelon Generation Company, LLC
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Jeffrey Benjamin
Vice President - Licensing and
Regulatory Affairs
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Gene H. Stanley
Vice President - Mid-West Operating Group
Exelon Generation Company, LLC
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. John Skolds
Chief Operating Officer
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Christopher Crane
Sr. Vice President - Mid-West Operating Group
Exelon Generation Company, LLC
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. John Cotton
Sr. Vice President, Operations Support
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. R. M. Krich
Director - Licensing
Mid-West Regional Operating Group
Exelon Generation Company, LLC
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, Illinois 60515