Commonwealth Edison
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Downers Grove, Illinois 60515

July 23, 1991

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Quad Cities Nuclear Power Station Units 1 and 2
Application for Amendment to Facility Operating
Licenses DPR-29 and DPR-30, Appendix A, Technical
Specifications
Technical Specification Upgrade Program
NRC Docket Nos. 50-254 and 50-265

Dr. Murley:

In 1990, Quad Cities Station initiated a formal program to enhance the Station's performance in various aspects of plant operation. The Performance Enhancement Program (PEP) was developed by assessing existing improvement plans, identifying potential weaknesses and prioritizing improvement actions. Necessary improvements to the Technical Specifications were identified as one of the Station top priority issue. Details of the goal and methodology for the Technical Specification Upgrade Program are provided in the Executive Summary section of the proposed amendment. The Program has been previously discussed with members of the NRR staff.

Pursuant to 10 CFR 50.90, Commonwealth Edison proposes to amend Appendix A, Technical Specifications to Facility Operating Licenses DPR-29 and DPR-30. The proposed amendment reflects Commonwealth Edison's efforts to upgrade existing Technical Specification Section 3.1/4.1, "Reactor Protection System". An overall description of the proposed amendment is also included in the Executive Summary.

The proposed amendment request for each Technical Specification section is provided as follows:

1. An Executive Summary of the Technical Specification Upgrade Program and the proposed amendment;

2. A summary of the changes;

3. A detailed description of the changes;

4. The proposed Technical Specification pages with the requested changes;

5. The existing Technical Specification pages for DPR-29, are marked-up to reflect the appropriate changes to the existing bases sections.

6. Commonwealth Edison's evaluation pursuant to 10 CFR 50.92(c) and 10 CFR 51.21; and,

7. The technical differences between the existing Unit 1 and Unit 2 Technical Specifications.



A001

The proposed amendment has been reviewed and approved by Commonwealth Edison's on-site and off-site review in accordance with Company procedures.

The Technical Specification Upgrade Program proposes changes to each section of the existing Technical Specifications. As such, Commonwealth Edison requests that the proposed amendments be approved and issued as one document rather than as individual sections. All proposed changes to the Technical Specifications which are developed under this program will be submitted to the Commission by no later than September 30, 1991. Commonwealth Edison respectfully requests the NRC's approval of the upgraded Technical Specifications by July 1, 1992.

To the best of my knowledge and belief, the statements contained are true and correct. In some respects, these statements are not based on my personal knowledge but obtained information furnished by other Commonwealth Edison employees and consultants. Such information has been reviewed in accordance with Company practice and I believe it to be reliable.

Commonwealth Edison is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated State Official.

Please direct any questions concerning this proposed amendment to R. Stols at 708/515-7283.

Very truly yours,

Rita Stols
Nuclear Licensing Administrator

Enclosure (A): Proposed Amendment to Technical Specification Section 3.1/4.1, "Reactor Protection System"

cc: A.B. Davis, Regional Administrator
L.N. Olshan, Project Manager
T.E. Taylor, Senior Resident Inspector
Illinois Department of Nuclear Safety

State of Ill, County of Cook
Signed before me on this 23 day of July, 1991.

Notary Public

" OFFICIAL SEAL "
SANDRA C. LARA
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 6/25/94

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# QUAD CITIES
# NUCLEAR POWER STATION

## TECHNICAL SPECIFICATION
## UPGRADE PROGRAM

## PROPOSED AMENDMENT
## SECTION 3.1/4.1 "Reactor Protection System"

# EXECUTIVE SUMMARY

Proposed Changes to TS 3.1/4.1

"REACTOR PROTECTION SYSTEM"

# EXECUTIVE SUMMARY

## QUAD CITIES TECHNICAL SPECIFICATION UPGRADE PROGRAM

The Quad Cities Technical Specification Upgrade Program was conceptualized in response to lessons learned from the Dresden Diagnostic Evaluation Team inspection and the frequent need for Technical Specification interpretations. A comparison of the existing Quad Cities Technical Specification and, Standard Technical Specifications and later operating plants' Technical Specification provisions was conducted to identify potential improvements in clarifying requirements and to identify requirements which are no longer consistent with current industry practices. The comparison review identified approximately one-hundred and fifty suggested improvements. The Technical Specification Upgrade Program was not intended to be a complete adoption of the Standard Technical Specifications. Overall, the Quad Cities custom Technical Specifications provide for safe operation of the plant and, therefore, only a upgrade was deemed appropriate.

The comparison study revealed a mix of recommended upgrades which included the relaxation of certain existing Technical Specification requirements, the addition of surveillances, the removal of allowances which would no longer be allowed under new plant licensing, and better definition of appropriate action requirements in the event a Limiting Condition for Operation cannot be met. The Technical Specification Upgrade Program also implements NRC recommended line item improvements to the Technical Specifications which were issued under Generic Letters.

In response to an NRC recommendation, the Unit 1 and Unit 2 Technical Specifications are combined into one document. To accomplish the combination of the Units' Technical Specifications, a comparison of the Unit 1 and 2 Technical Specifications was performed to identify any technical differences. The technical differences are identified in the proposed amendment package for each section.

The Technical Specification Upgrade Program was identified as a Station top priority during the development of Quad Cities Station's Performance Enhancement Program (PEP). The Technical Specification Upgrade Program's goal is to provide a better tool to Station personnel to implement their responsibilities and to ensure Quad Cities Station is operated in accordance with current industry practices. The upgraded specifications provide for more safe and reliable operation of the plant. The program improves the operator's ability to use the Technical Specifications by more clearly defining Limiting Conditions for Operations and required actions. The most significant improvement to the specifications is the addition of equipment operability requirements during shutdown conditions.

## EXECUTIVE SUMMARY (continued)

### Proposed Changes to Technical Specification Section 3.1/4.1, "Reactor Protection System"

The present Quad Cities Technical Specification contain Applicability and Objective statements at the beginning of most sections. The proposed change provides each specification with a Limiting Condition for Operation (LCO), Applicability, Action and Surveillance Requirement section, as applicable.

The proposed changes to section 3.1/4.1 resuits in th consolidation and rearrangement of the instrumentation tab. to present the information in a consistent and logical manner. Actions to be taken when required instrumentation is inoperable is provided following the LCO requirements.

# SUMMARY OF CHANGES

PROPOSED TS 3.1/4.1

"REACTOR PROTECTION SYSTEM"

## SUMMARY OF CHANGES

PROPOSED SPECIFICATION 3.1/4.1

REACTOR PROTECTION SYSTEM

This amendment package is one in a series of proposals that will provide improvements to the present Quad Cities Technical Specifications. The summary of changes includes a general section to describe generic changes that are applicable to more than one section of the technical specifications and a section which provides the changes that are page by page specific.

GENERIC CHANGES

Item 1:

The present Applicability and Objective statements at the beginning of each technical specification section are being deleted. The Applicability statement is being included after the LCO statement in each individual specification.

Item 2:

Each specification is rearranged to follow an STS type of format while retaining the present two column layout. Each specification will contain an LCO, Applicability, Action and Surveillance Requirement section, as applicable.

Item 3:

The instrumentation tables are rearranged to present the information in a consistent and logical manner. The LCO requirements tables are rearranged to present in a left to right reading pattern for the columns of Trip Function, Minimum Operable Channels per Trip System, Trip Level Setting, Applicable Operational Modes, and Action. The Applicable Operational Modes column is added so that the user can easily determine when the instrumentation is required to be operable. Following the LCO requirements tables are the Actions to be taken when required instrumentation is inoperable and then the necessary Table Notations. Changes to the Surveillance Requirements Tables include rearrangement of the present columns where necessary to present a consistent and logical format, deletion of the Group A, B, or C designation for instrumentation, and the addition of Applicable Operational Modes consistent with the LCO requirements.

Item 4:

The Bases for each technical specification section is relocated to the end of the section.

SPECIFIC CHANGES

Item 1:

Page 3.1/4.1-1, DPR-29

Present Specification 3.1.A/4.1.A on the Reactor Protection System is modified as follows:

a. Present LCO 3.1.A is rewritten to reference only Table 3.1-1. Present Tables 3.1-1 through 3.1-4 are combined into Table 3.1-1.

b. A new Applicability section is added to reference the applicable Operational Modes in Table 3.1-1 for RPS instrumentation operability.

c. A new Actions section is added to provide the action requirements that are applicable to all the RPS instrumentation. The instrument specific actions remain in Table 3.1-1.

d. New Surveillance Requirement 4.1.A.2 is added to specify testing requirements for RPS instrumentation response times.

Item 2:

Pages 3.1/4.1-1 and 3.1/4.1-2, DPR-29

Proposed changes to present Specification 3.1.B/4.1.B and 4.1.C include the following:

a. The title of APRM Scram and Control Rod Block Flow Biased Upscale Setpoints is added.

b. An LCO statement is added as 3.1.B to reference Specifications 2.1.A.1 and 2.1.B for the APRM flow biased neutron flux upscale scram trip setpoint and the flow biased neutron flux upscale control rod block trip setpoint.

c. An Applicability section is added to require these setpoints to be established when in MODE 1 with thermal power greater than or equal to 25% of rated thermal power.

d. New Actions are added to require compliance with the required setpoints or initiate corrective action within 15 minutes and adjust the setpoints to be consistent with the trip setpoints within 6 hours or reduce thermal power to less than 25% within the next 4 hours. Provisions are retained from present Specifications to allow adjusting the APRM gain instead of the setpoints.

e. Present Surveillance Requirement 4.1.C is deleted. This

testing requirement consists of requiring a functional test of all other RPS channels that monitor the same variable when a channel is failed in the unsafe condition.

Item 3:

Pages 3.1/4.1-3 through 3.1/4.1-10, DPR-29

a. Renumber the Bases pages to allow placement at the end of Section 3.1/4.1.

b. Delete the Bases for the APRM/IRM overlap function.

c. In the Surveillance Requirements Bases, delete the description of the method used to determine the minimum functional testing frequency in accordance with Reference 1. Reference 1 is an outdated document and is no longer used to determine surveillance testing intervals. Add a description of the methods currently used to determine surveillance testing intervals.

d. Add Bases changes to allow implementation of the proposed changes to the technical specifications.

Item 4:

Pages 3.1/4.1-11 through 3.1/4.1-13, DPR-29

a. Combine present Tables 3.1-1, 3.1-2, and 3.1-3 into one Table 3.1-1. This combination will provide a single table containing an Applicable Operational Modes column instead of the present three tables, one each for the Refuel Mode, Startup/Hot Standby Mode, and the Run Mode.

b. The present columns for Table 3.1-1 are reordered such that the Trip Function is the first column and the Minimum Operable Channels Per Trip System column is the second column.

c. The Applicable Operational Modes are given as 1, 2, 3, 4 or 5.

d. The APRM Downscale scram Trip Function is deleted.

e. The present requirements for the reactor high pressure scram, the drywell high pressure scram, the reactor low water level scram, the main steamline high radiation scram, and the main steamline isolation valve closure scrams to be operable in the Refuel Mode are deleted from Table 3.1-1.

f. Delete the present requirement in Table 3.1-2 for the Main steamline isolation valve closure scram to be operable in Startup/Hot Standby.

g. The Minimum Operable Channels per Trip System for Turbine Stop Valve Closure is changed from 2 to 4.

h. Items 3a, 3b, 4b, and 4c of Table 3.1-1 are added to incorporate the STS provisions for "shorting links", for IRM and APRM Mode 5 requirements.

i. APRM High Flux (Scram Clamp) is added to Table 3.1-1, as item 4d. This provision is consistent with the STS provisions for Fixed Neutron Flux-Upscale and NEDC 30851P-A.

Item 5:

Page 3.1/4.1-14, DPR-29

The following changes are made to the Notes for present Tables 3.1-1, 3.1-2, and 3.1-3.

a. Present Note 2 contains the actions to be taken when the minimum operable channels requirement cannot be met for both trip systems. These present actions are moved from the Table Notes and are placed immediately behind new Table 3.1-1. New action requirements are added based on Standard Technical Specification (STS) requirements.

b. Present Note 7 is deleted. This note states that the turbine condenser low vacuum scram and the main steamline isolation valve closure scram are automatically bypassed when reactor pressure is < 1060 psig.

c. Present Note 11 describes the APRM downscale trip function. This note is deleted with the deletion of the APRM/IRM overlap Trip Function.

d. New Table Notes (a), (c), (g), (i), (m), and (n) are added.

Item 6:

Page 3.1/4.1-15, DPR-29

The changes to present Table 4.1-1 are as follows:

a. Change title to Table 4.1-1 to Reactor Protection System (Scram) Instrumentation Channel Functional Test and Channel Check Requirements.

b. Delete the present column containing the Group A, B, and C designations.

c. Add new columns for Applicable Operational Modes, Channel Functional Test and Channel Check. Add Modes to match operability requirements for Channel Functional Testing with operability requirements for the instruments in Table 3.1-1. Change present column title Functional Test to Channel Functional Test Method.

d. Make changes to the surveillance intervals in accordance with

General Electric Topical Report NEDC-30851P-A. These changes will increase the functional testing for the Manual Scram from every 3 months to weekly. The present functional test frequency of weekly for APRM High Flux (flow biased) is changed to within one week after entering Operational Mode 1 and quarterly thereafter. A new requirement to functional test APRM High Flux (Scram Clamp), is added to provide consistency between Table 3.1-1 and the surveillance tables. Existing plant procedure requirements maintain this trip function at the same test frequency as APRM High Flux (Flow Bias). The present functional test frequency of once each week for APRM inoperative is changed to quarterly. The present functional test frequency of before each startup for IRM inoperative is deleted. Present functional testing requirements for reactor high pressure, drywell high pressure, reactor low water level, turbine condenser low vacuum, main steamline high radiation, main steamline isolation valve closure, turbine control valve fast closure, turbine stop valve closure and turbine EHC control fluid low pressure are changed to quarterly.

e. Delete the APRM Downscale functional test requirement.

f. Add new channel check provisions for IRMs and APRMs that are consistent with STS provisions. Retain the current requirements for daily channel check of Reactor Low Water Level and channel check of Main Steam Line High Radiation once per shift.

Item 7:

Page 3.1/4.1-16, DPR-29

The following changes are made to the Table Notes for Table 4.1-1.

a. Delete present Note 1 pertaining to an outdated method of determining surveillance frequency.

b. Delete present Note 3 which references the three groups (A, B, and C) that are no longer being utilized.

c. Delete present Note 6 which requires testing frequency need not exceed weekly.

d. Delete present Note 8 which specifies a functional test of the master and slave trip units monthly and a calibration of the trip unit concurrent with the functional test.

e. Add new Table Notes (b), (e), (g), (h), (i), (j), (k), and (l).

Item 8:

Page 3.1/4.1-17, DPR-29

Changes to present Table 4.1-2 and related notes are as follows:

a. Delete the column for Group A, B, and C.

b. Add the Applicable Operational Modes column for Calibration testing to match operability requirements for the instruments in Table 3.1-1. Change "Calibration Test" terminology to "Channel Calibration."

c. The Minimum Frequencies for IRM High Flux are changed from every controlled shutdown to every refueling outage, not to exceed once per week, are consistent with STS provisions.

d. Present calibration frequency of quarterly for Reactor High Pressure, Drywell High Pressure, Turbine Condenser Low Vacuum, and Turbine EHC Control Fluid Low Pressure is changed to at least once per Refueling Outage in accordance with STS guidelines.

e. Present calibration frequency for Reactor Low Water Level of monthly for trip units concurrently with functional testing is changed to quarterly in accordance with GE Topical Report NEDC-30851P-A.

f. Change the Calibration Test method for Reactor Low Water Level, Loss of EHC Control Oil Pressure, Turbine Control Valve Fast Closure and High Water Level in Scram Discharge Volume to Standard Pressure Source.

g. Delete present Note 1 concerning the Group A, B, and C designations.

h. APRM High Flux calibration requirements are changed to provide consistency between Table 3.1-1 and the surveillance requirement tables. APRM surveillance requirements are changed to Flow Bias, 15% Scram and Scram Clamp. The calibration method for these instruments has been changed to identify these as electronic calibrations.

i. Add new Notes (a), (d), (g), (i), (j), and (k).

j. IRM calibration method is changed to electronic calibration.

# DESCRIPTION OF CHANGES

PROPOSED TS 3.1/4.1

"REACTOR PROTECTION SYSTEM"

## DESCRIPTION OF PROPOSED AMENDMENT REQUEST

PROPOSED SPECIFICATION 3.1/4.1

REACTOR PROTECTION SYSTEM

The changes proposed in this amendment request are made to 1) improve the understanding and usability of the present technical specifications, 2) incorporate technical improvements, and 3) include some provisions from later operating BWR plants.

An item by item description of the proposed changes requested is provided below. The Summary of Changes section can be referred to in order to reference back to a given change and its affected page.

GENERIC CHANGES

Item 1

The present Quad Cities technical specifications contain Applicability and Objective statements at the beginning of most sections. These statements are generic in nature and do not provide any useful information to the user of the technical specifications. The proposed change will delete the Objective statement and provide Applicability statements within each specification similar to the STS. The proposed Applicability statement to be included in each specification will include the Reactor Operational Modes or other conditions for which the LCO must be satisfied.

Item 2

The changes proposed in this item will provide an STS type of format while retaining the present two column layout. The present format does not provide a separation of LCO, Applicability, and Action requirements that are easily understood and identified. The two column layout has been utilized at Quad Cities since initial licensing of the plant and is preferred by the plant over the single column STS layout.

Item 3

The proposed rearrangement of the instrument tables will provide consistency in presentation of material and present the material in a fashion that is user friendly. The addition of the Applicable Operational Modes column to the instrumentation tables will provide readily accessible information concerning when equipment is required operable and when surveillance requirements must be performed.

Item 4

This item provides the relocation of the bases of the technical specifications from the present location of immediately following the LCO material to the end of the section. For sections with tables or figures, the tables and figures will now be located after the LCOs and before the bases. This change recognizes that the bases provide reference material which is of secondary importance to the other material in the technical specifications.

SPECIFIC CHANGES

Item 1

Present LCO 3.1.A references Tables 3.1-1 through 3.1-4 for the setpoints, minimum number of trip systems, and minimum number of instrument channels that must be operable for each position of the reactor mode switch. The proposed change will combine these tables into one Table 3.1-1. Instead of a separate table for each of the reactor modes of Refuel, Startup/Hot Standby, and Run, the new Table 3.1-1 will contain a column for Applicable Operational Modes to indicate when the instrumentation is required to be operable. The use of a single table for this purpose will help to eliminate the possibility of using the wrong table to determine operability requirements and will implement a format similar to later plants using the STS.

The proposed Applicability section in LCO 3.1.A is similar to STS requirements and references new Table 3.1-1 for operability requirements relative to reactor Operational Modes.

The proposed Actions section for LCO 3.1.A follows STS guidelines and implements allowed out of service times from General Electric Topical Report NEDC-30851P-A. Applicable footnote requirements from the STS have been incorporated into proposed Actions 2 and 3 since the Quad Cities two column format does not make use of footnotes at the bottom of the page.

The present Surveillance Requirements for 4.1.A have been modified by the addition of 4.1.A.2. The new Surveillance Requirement provides definitive provisions for testing system response times of the reactor protection system in accordance with STS guidelines.

Item 2

Present Specification 3.1.B/4.1.B does not have a separate title within the Reactor Protection System Specification. The proposed change will add the title of APRM Scram and Control Rod Block Flow Biased Upscale Setpoints consistent with the subject matter of the specification.

The proposed LCO for 3.1.B is similar to the present specification

since both reference Specifications 2.1.A.1 and 2.1.B for APRM and rod block settings. The proposed Applicability section is similar to present requirements by requiring operability only in Operational Mode 1 when thermal power is greater than or equal to 25% of rated thermal power.

The proposed Actions for 3.1.B are more restrictive than present requirements since time frames for accomplishing the actions are specified similar to STS provisions. The proposed actions require that with the APRM flow biased neutron flux upscale scram trip setpoint and/or the flow biased neutron flux upscale control rod block trip setpoint less conservative than the value shown in the equations in Specifications 2.1.A.1 and 2.1.B, corrective action must be initiated within 15 minutes and setpoints adjusted to be consistent with the trip setpoint values within 6 hours or thermal power must be reduced to less than 25% within the next 4 hours. Provisions for adjusting the APRM gain, instead of the setpoints, are included as in the present specifications.

Present Surveillance Requirement 4.1.C provides additional testing provisions for RPS channels when it is determined that a channel is failed in the unsafe condition and the minimum operable channels per trip system requirement cannot be met. This additional functional testing requirement is not necessary to determine operability of the remaining channels and most likely will not provide any useful information concerning a potential common cause failure. The plant evaluates instrumentation failures as they occur including the potential for common cause failure of other similar equipment. Present Surveillance Requirement 4.1.C is deleted by these proposed changes.

Item 3

This item relocates the present Bases for 3.1/4.1 to the end of the section. This move will place the most important information first and make this information more readily accessible to the user. The changes to the present Bases include the deletion of the discussions for the APRM Downscale scram and deletion of the outdated methods described to determine the minimum functional testing frequency in accordance with Reference 1. The technical discussion for deletion of the APRM Downscale scram is provided below. Other changes to the Bases are necessary to allow implementation of the changes described in this submittal.

Item 4

This item contains the proposed changes to Tables 3.1-1, 3.1-2, and 3.1-3. Presently, three tables are provided for listing the RPS instrumentation requirements, one table each for the Refuel, Startup/Hot Standby, and Run modes. The proposed change will combine the three tables into one by adding an Applicable Operational Modes column as Modes 1, 2, 3, 4 or 5 corresponding to the Operational Mode definitions proposed in Table 1.2. The use

of one table instead of three will provide a more user friendly format and help to eliminate the possibility of looking at the wrong table for RPS instrumentation operability requirements.

The present order for the columns in Tables 3.1-1 through 3.1-3 is changed such that the Trip Function is first and the Minimum Operable Channels per Trip System is second. This change is proposed in order to make the tables more user friendly since the Trip Function is the first item looked for in these tables before looking for operability information.

The proposed Applicable Operational Modes for Table 3.1-1 are 1, 2, 3, 4, or 5. The proposed instrumentation operability requirements ensure availability of the scram trip functions in Operational Modes where the scram may be necessary.

APRM Downscale Deletion

The APRM Downscale Scram existed on several early BWR plants including Dresden Units 2 and 3 and Quad Cities Units 1 and 2. It was deleted by General Electric on later BWRs because it was not seen as performing any function commensurate with its required surveillance. In consideration of this surveillance difficulty, and the doubtful contribution which was made to the overall neutron monitoring protection system, GE decided to eliminate the APRM Downscale Scram on later plants. The APRM Downscale Scram has already been deleted from the Dresden Technical Specifications and has been evaluated by GE and found to be unnecessary for the Quad Cities plant. Removal of the APRM/IRM companion scram eliminates the APRM downscale scram which occurs in the Run mode with the simultaneous IRMs "high high" or inoperable. The accidents of concern with respect to the APRM/IRM companion scram are the Rod Drop Accident (RDA) and the low power Rod Withdrawal Error (RWE). FSAR and reload safety analyses do not credit this scram function in the termination of either of these accidents. The limiting accidents (i.e., RDA and RWE) in the operating region of transition between the Startup and Run Modes are well understood and are evaluated in FSAR and/or reload safety analyses. Elimination of the APRM Technical Specification requirement for the downscale/IRM "high high" or inoperable trip does not introduce any new accident scenario since it is not credited in the termination of these limiting events. Other control rod initiated events which are less limiting in this region, such as fast period events (either due to operator error or CRD malfunction), are subsets of the low power RWE event and are bounded by both it and the Design Basis RDA. General Electric has indicated that, for reactivity insertion mechanisms at very low power (if postulated to occur coincident with an inappropriate mode switch position), the only effect of the deletion of the APRM downscale scram would be that the initial power level could be a few percent lower which would not have a significant effect on the severity of the event. In addition, proper overlap between the IRMs and APRMs is not affected since the calibration requirements are not being changed.

Present Table 3.1-1 contains operability requirements for RPS Instrumentation for the Refuel mode. The proposed changes will delete operability requirements in the Refuel mode for the reactor high pressure scram, the drywell high pressure scram, the reactor low water level scram, the main steamline high radiation scram, and the main steamline isolation valve closure scram. In the Refuel mode, interlocks are in place so that one control rod only may be withdrawn when flux amplifiers are set at the proper sensitivity level and the refueling crane is not over the reactor. In the Refuel mode the trips from the turbine control valves, turbine stop valves, main steamline isolation valves, and condenser vacuum are bypassed. In the Refuel mode, scrams from reactor high pressure and drywell high pressure are not needed due to the unlikely occurrence of high pressure in this mode of operation. Also due to the limitation on control rod withdrawal in the Refuel mode, scram signals from reactor low water level and main steamline high radiation are not required to perform a mitigating function.

Present Table 3.1-2 requires the main steamline isolation valve closure scram to be operable in the Startup/Hot Standby mode. This signal is bypassed in the Startup/Hot Standby mode and is being deleted from Table 3.1-2 and will not be included in new Table 3.1-1.

The Minimum Operable Channels per Trip System requirement for the Turbine Stop Valve Closure Scram is being changed from 2 to 4. This change is being made to clarify surveillance requirements and to prevent possible misinterpretation of operability requirements. The present design incorporates one limit switch per valve with each limit switch actuating two contacts (channels of trip signals), one for each trip system. The change to four Minimum Operable Channels per Trip System reflects the actual number of channels installed in the plant and will help to ensure that proper Action is taken if a channel is inoperable.

The STS provisions to remove "shorting links" prior to and during shutdown margin demonstrations are incorporated into the Mode 5 requirements for IRMs and APRMs.

APRM High Flux (Scram Clamp) is added to be consistent with STS Fixed Neutron Flux-Upscale provisions.

Item 5

The present Notes for Tables 3.1-1 through 3.1-3 contain both Notes and Actions to be taken if instrumentation requirements are not met. The proposed change will separate the Notes and the Actions such that Action requirements are easily discernable and are on a separate page following the applicable table. New Action requirements are added based on STS provisions and are needed to address the addition of the new modes of operation added to the table as well as to implement requirements found acceptable for use at STS BWRs. The present Action allowance of 8 hours to reach

Startup is retained in the new requirements in order to allow for an orderly plant shutdown from the full power, 100% rod pattern.

Present Note 7 for Tables 3.1-1 through 3.1-3 is deleted by the proposed changes. This note states that the turbine condenser low vacuum scram and the main steamline isolation valve closure scram are automatically bypassed when reactor pressure is < 1060 psig. The actual bypass of the functions is based on Reactor Mode Switch position and thus Note 7 is not needed.

Present Note 11 describing the APRM/IRM overlap trip is being deleted since as described above, the APRM Downscale trip is being deleted.

New notes (a), (c), (g), (i), (m), and (n) are added to proposed Table 3.1-1 in order to provide information similar to that contained in STS plant versions. Proposed note (a) implements an out of service time of 6 hours consistent with changes proposed in General Electric Topical Report NEDC-30851P-A.

Item 6

Item 6 involves proposed changes to present Table 4.1-1 on Scram Instrumentation Channel Functional Tests and Channel Check Requirements. The column containing Group A, B, and C designations is deleted since it is not being utilized. A new column for Applicable Operational Modes is added to provide consistency between Table 3.1-1 and the Surveillance Requirements Tables. The terminology "Functional Test" is changed to "Channel Functional Test" to be consistent with proposed Definition 1.6. A new column for channel check requirements is added. Channel checks for IRMs and APRMs are added to be consistent with STS provisions, while the current requirements for channel check of Reactor Low Water Level, Daily, and Main Steam Line High Radiation, once each shift, are retained.

New channel functional test and channel check provisions are added for High Flux (Scram Clamp). These requirements are consistent with existing plant procedures to require APRM High Flux (Scram Clamp) functional testing within one week after entering Operational Mode 1 and quarterly thereafter as supported by NEDC 30851P-A. The channel check provisions of STS, APRM Fixed Neutron Flux-Upscale are incorporated as proposed channel check provisions for APRM High Flux (Scram Clamp).

Another change to Table 4.1-1 implements surveillance intervals in accordance with General Electric Topical Report NEDC-30851P-A. The proposed changes are in some cases more conservative and in some cases less conservative than present requirements. The overall affect on RPS reliability and availability was evaluated using the proposed surveillance testing intervals and the methodology of the Topical Report. The following surveillance frequency changes are proposed:

a. Change the manual scram functional test frequency from every 3 months to weekly.

b. Change the APRM high flux scram functional test frequency from once each week to within one week after entering Operational Modes 1 and quarterly thereafter.

c. Change the APRM inoperative and main steamline high radiation scram functional test frequency from once each week to quarterly.

d. Change the reactor high pressure, drywell high pressure, reactor low water level, turbine condenser low vacuum, main steamline isolation valve closure, turbine control valve fast closure, turbine stop valve closure, and turbine EHC control fluid low pressure scrams from in accordance with Note 1 to quarterly.

Note that present Note 1 to Table 4.1-1 allows the functional test frequency for the affected parameters to be extended to quarterly using an outdated methodology which is being deleted by the changes proposed in this amendment request. Also, it should be noted that the "Trip Level Settings" listed in proposed Table 3.1-1 are limiting setpoints which are equivalent to "Allowable Values" in the STS. The actual plant setpoints are conservatively adjusted with respect to the Technical Specifications "Trip Level Settings" to accommodate the drift associated with the particular instrument and test interval. As such, revised results of instrument setpoint calculations required to accommodate the longer test intervals may result in changes to actual plant setpoints, but will not require further Technical Specification changes.

Commonwealth Edison Company participated in the BWR Owner's Group effort that produced Topical Report NEDC-30851P-A. As such, plant specific analyses were performed to identify the differences between the parts of the RPS that perform trip functions in the Quad Cities Plant and those of the base case plant analyzed in NEDC-30851P-A. These differences were analyzed and found to be acceptable or to be bounded by the base case. The additional time interval between tests resulting from the changes described in NEDC-30851P-A will be factored into the instrument setpoint calculations for the affected instruments. If the setpoint calculations so indicate, the setpoints will be conservatively adjusted to accommodate the additional drift associated with the longer test interval or the test interval will not be extended.

The present functional test frequency of before each startup for IRM inoperative is deleted. This change provides consistency with STS provisions and deletes an unnecessary test requirement. The prior to startup test requirement for IRM High Flux and the weekly functional test of the IRM Inoperative while in Operational Modes 2, 3, 4, or 5 remains in the Technical Specifications to ensure IRM operability when required.

The APRM Downscale functional test requirements are deleted in conjunction with the deletion of the APRM Downscale Trip Function as described above in Item 4.

Item 7

Item 7 involves changes to the Notes for Table 4.1-1. Present Note 1 is deleted since this outdated methodology for determining surveillance intervals is no longer utilized. Present Note 3 which references Groups A, B, and C is deleted since the groups are no longer utilized. Present Note 2 is deleted and the requirements to channel check RPS instruments are outlined under the new Channel Check column of Table 4.1-1. New Notes (b), (e), (g), (h), and (l) are added to the table and are modeled after STS provisions. Proposed Note (i) clarifies testing requirements for the APRM High Flux (flow biased) and APRM High Flux (Scram Clamp) Trip Functions such that present plant testing methods of within one week after entering Operational Mode 1 are not misunderstood. Proposed Note (j) is added to Table 4.1-1 to provide consistent operability exceptions with those in Tables 3.1-1 and 4.1-2. Proposed Note (k) allows a necessary exception to the provisions of Specification 4.0.D such that Operational Mode 2 can be entered from Operational Mode 1 and sufficient time allowed, 12 hours, to perform the Channel Functional Test for the IRM High Flux and Inoperable Trip Functions.

Item 8

The proposed changes to Table 4.1-2 and related Notes are described in this item. The present column in Table 4.1-2 designating Groups A, B, and C is deleted as in Table 4.1-1 above. The Applicable Operational Modes Column is added to the Table to indicate the conditions when the calibration requirements must be met.

Changes in the Trip Function column listings for APRM High Flux are made to provide consistency between Table 3.1-1 and the surveillance requirement tables. Current requirement, APRM High Flux-Output Signal is deleted, and 15% Scram and Scram Clamp are added. The proposed minimum frequencies for these trips are consistent with STS provisions for APRM Neutron Flux-Upscale, Setdown and Fixed Neutron Flux-Upscale respectively.
The Channel Calibration Methods for IRM High Flux, APRM High Flux 15% Scram and APRM-Scram Clamp are changed to electronic calibration to clarify and incorporate current plant procedures into the Technical Specifications. These provisions are consistent with the STS provisions for neutron measurement systems in other plants.

The calibration frequency IRM High Flux is changed to the STS provisions of every refueling for Modes 2, 3, 4, 5. The present calibration frequencies of quarterly for Reactor High Pressure, Drywell High Pressure, Turbine Condenser Low Vacuum, and Turbine

EHC Control Fluid Low Pressure Trip Functions are changed to Refueling Outage interval in accordance with STS guidelines. As with the changes proposed to increase the Channel Functional Test Frequencies in Table 4.1-1, the extension of these Channel Calibration Test frequencies will be evaluated prior to implementation, with instrument drift factored into the setpoint methodology. The proposed change to the STS Refueling Outage testing intervals will allow the Channel Calibrations to be performed at a time when the plant is shutdown and the potential for inadvertent reactor trips is minimized.

The present Calibration Standards for the Reactor Low Water Level and Scram Discharge Volume High Water Level is listed as Water Level and for the Loss of EHC Control Oil Pressure and Turbine Control Valve Fast Closure as Pressure Source. The proposed change will list the Channel Calibration Method as Standard Pressure Source for all four of these Trip Functions. This change in terminology is made to clarify present requirements without changing any present testing methods or intent.

Present Note 1 concerning the Group A, B, and C designations is deleted as in Table 4.1-1 above. New Note (a) is added to point out that neutron detectors, due to location and design are excluded from calibration. New Note (g) is added by transferring the frequency of test for the LPRMs from the table column to the Notes. This change is made because the frequency of test is every 1000 equivalent full power hours which does not fit the new Surveillance Frequency designations proposed in Table 1.1. New notes (d) and (k) are consistent with STS provisions for APRM weekly calibrations. Proposed Notes (i) and (j) are added to Table 4.1-2 to provide consistent operability exceptions with those in Tables 3.1-1 and 4.1-1. Present Note 7 requires trip units to be calibrated monthly concurrently with functional testing and that transmitters be calibrated once per operating cycle. Present Note 7 is rewritten as Note (e) and revised to require trip units to be calibrated quarterly consistent with the changes proposed for Table 4.1-1.