50-237 DRESDEN 2 CEC

EXECUTIVE SUMMARY TECHNICAL SPECIFICATION 3/4.10
REFUELING OPERATIONS

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ATTACHMENT 1

EXECUTIVE SUMMARY

Technical Specification 3/4.10

"REFUELING OPERATIONS"

EXECUTIVE SUMMARY

The Dresden Technical Specification Upgrade Program (TSUP) was conceptualized in response to lessons learned from the Diagnostic Evaluation Team inspection and the frequent need for Technical Specification interpretations. A comparison study of the Standard Technical Specification (STS), later operating plant's Technical Specifications provisions and Quad Cities Technical Specifications was performed prior to the Dresden TSUP effort. The study identified potential improvements in clarifying requirements and requirements which are no longer consistent with current industry practices. The Dresden TSUP will enhance the Quad Cities TSUP currently under review by the NRC. As a result of the inconsistencies in the Quad Cities submittal compared to the Standard Technical Specifications (STS), Dresden's submittal will more closely follow the provisions of STS and in conjunction, Quad Cities will amend their submittal so that Quad Cities and Dresden are identical within equipment and plant design. The format for the Dresden TSUP will remain as a two column layout for human factors considerations. Additionally, chapter organizations will remain unchanged.

The TSUP is not intended to be a complete adoption for the STS. Overall, the Dresden custom Technical Specifications provide for the safe operation of the plant and therefore, only an upgrade is deemed necessary.

In response to an NRC recommendation, Quad Cities combined the Unit 1 and Unit 2 Technical Specifications into one document. The Dresden Unit 2 and Unit 3 Technical Specifications will also be combined into one document. To accomplish the combination of the Units' Technical Specification, a comparison of the Unit 2 and Unit 3 Technical Specification was performed to identify any technical differences. The technical differences are identified in the proposed amendment package for each section.

The TSUP was identified as a station top priority and is currently contained in the Dresden Management Action Plan (DMAP). The TSUP goal is to provide a better tool to station personnel to implement their responsibilities and to ensure Dresden Station is operated in accordance with current industry practices. The improved Technical Specifications provide for enhanced operation of the plant. The program improves the operator's ability to use the Technical Specifications by more clearly defining the Limiting Conditions for Operation 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 3/4.10, "REFUELING OPERATIONS"

The current Dresden and Quad Cities Technical Specifications contain Applicability and Objective statements at the beginning of most sections. The proposed amendment will delete the "Objective" statement and integrates appropriate applicability statements within the specifications. This provides a clarification of the intended requirements and actions which are required when the specification cannot be met.

STS guidelines allowing the reactor mode switch to be in either the Refuel or Shutdown position during operational mode 5 are adopted in the proposed changes to the refueling interlocks specifications. Clarifications are added to the proposed applicability. Proposed actions from STS guidelines have been added. Present surveillance requirements are retained and STS provisions are added to verify that the reactor mode switch is locked in the Shutdown or Refuel position.

Present core monitoring requirements are enhanced by inclusion of STS guidelines as modified by General Electric recommendations on the usage of "shorting links." STS based remedial action provisions are adopted and present surveillance requirements are expanded by adoption of STS guidelines and General Electric recommendations.

STS based action statements are incorporated in the proposed changes to the fuel storage pool water level specifications. Present level limitations are retained in the proposed change.

Present allowance for the removal of up to two control rods and/or control rod drive mechanisms for maintenance is replaced with more prescriptive STS guidelines allowing removal of only one control rod and/or control rod drive mechanism during operational modes 4 and 5. Present surveillance requirements are replaced with ones that verify all the proposed LCO restrictions.

Present provisions for extended core maintenance - multiple control rod removal specifications are replaced with STS guidelines containing more prescriptive LCO, action and surveillance requirements.

Present limitations on spent fuel cask handling are modified in accordance with the STS. An action to suspend heavy load handling operations is included in the proposed specification.

New specifications based on STS guidelines are included for control rod position, decay heat, communications, reactor vessel water level and RHR operability.

ATTACHMENT 2

DESCRIPTION OF CHANGES

Technical Specification 3/4.10

"REFUELING OPERATIONS"

ATTACHMENT 2

DESCRIPTION OF PROPOSED AMENDMENT

The changes proposed in this amendment request are made to improve the understanding and usability of the present technical specifications, and to incorporate the technical improvements from the Standard Technical Specifications (STS).

The present Dresden and 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 based on the STS. The proposed Applicability statement to be included in each specification will include the applicable operational modes or other conditions for which the Limiting Condition for Operation (LCO) must be satisfied.

The STS action provisions which delineate a specification 3.0.4 exception are not incorporated into the proposed specifications. The incorporation of the Generic Letter 87-09 change to STS specification 3.0.4 (Dresden and Quad Cities proposed 3.0.D specification) requires that each action be independently evaluated for applicability of the new specification. These evaluations are provided in Attachment 7.

SPECIFIC CHANGES

Section 3/4.10, Reactor Mode Switch

The proposed changes described involve the rewrite of present Specification 3.10.A/4.10.A, Refueling Interlocks, using STS format and incorporating STS provisions along with STS guidelines. The Refueling Interlocks specification addresses the operability of the reactor mode switch and the refueling interlocks associated with the Refuel position of the reactor mode switch. STS provisions are used to write proposed LCO 3.10.A with the addition of STS guidelines to allow the reactor mode switch to be in either the Shutdown or Refuel position. Proposed reactor mode switch in Refuel interlocks include control rod blocks, refueling platform reverse motion blocks, and refueling platform hoist blocks. The proposed applicability for Refueling Interlocks implements the intent of the current specifications. The proposed applicability clarifies the present requirements by requiring operability in operational mode 5 during core alterations with equipment associated with the Refuel position interlocks. The proposed actions for Specification 3.10.A are based on STS guidelines since present specifications do not contain remedial action statements. The proposed action 3.10.A.1 requires that with the reactor mode switch not locked in the Shutdown or Refuel position, core alterations are suspended and the reactor mode switch is required to be locked in the Shutdown or Refuel position. The proposed action 3.10.A.2 requires that with the one-rod-out interlock inoperable, the reactor mode switch be locked in the Shutdown position. Proposed action 3.10.A.3 requires that with any of the required

Refuel position equipment interlocks inoperable, core alterations with equipment associated with the inoperable Refuel position equipment interlock be suspended. Present surveillance requirements (SR) are rewritten into proposed SRs 4.10.A.1, 4.10.A.2, and 4.10.A.3. Proposed SR 4.10.A.4 is added from STS guidelines in order to provide verification that the reactor mode switch is locked in the Shutdown or Refuel position during core alterations.

3/4.10.B, Instrumentation

This section describes the rewrite of present Specification 3/4.10.B, Core Monitoring. The STS provisions are used for proposed LCO 3.10.B such that at least two source range monitors (SRM) are required to be operable and inserted to the normal operating level. STS restrictions on SRMs are also adopted so that continuous visual indication is provided in the control room, one of the detectors is located in the quadrant where fuel or control rods are being moved and one is in an adjacent quadrant, and the "shorting links" are removed from the RPS circuitry. Included in the proposed LCO is the present provision that allows the use of special movable detectors in place of the SRMs as long as they are connected to the normal SRM circuits. The applicability of operational mode 5 is modified using provisions from the current Technical Specifications and the LaSalle Technical Specifications. The proposed applicability allows one exception to operational mode 5: no more than 2 fuel assemblies are present in each quadrant and the assemblies are located adjacent to the SRM and if movable detectors are used, each group is separated by at least two fuel cells. The exception is retained to allow reactor core loading or unloading without the use of neutron sources to achieve the minimum required SRM count rate. Present Specification 3.10.B does not contain remedial action statements and STS guidelines are adopted. Proposed action 3.10.B requires that with the provisions of the LCO not met, that all operations involving core alterations and control rod movement be suspended and that all insertable control rods be fully inserted. The present surveillance requirements in 4.10.B are rewritten in accordance with STS guidelines.

3/4.10.C, Control Rod Position

The current Dresden and Quad Cities Technical Specifications do not contain explicit provisions requiring that all control rods be inserted while in operational mode 5 during core alterations. Proposed Specification 3/4.10.C, based on STS guidelines, is added in order to address the necessary requirements for these conditions. Proposed LCO 3.10.C provides the explicit requirement that all control rods be inserted while in operational mode 5 during core alterations. With all control rods not inserted, proposed action 3.10.C requires suspension of all core alterations, except that one control rod may be withdrawn under the control of the reactor mode switch Refuel position one-rod-out interlock. In accordance with STS guidelines, proposed SR 4.10.C requires that all control rods be verified to be fully inserted within 2 hours prior to: a) the start of core alterations; and b) the withdrawal of one control rod under the control of the reactor mode switch Refuel

position one-rod-out interlock. Proposed SR 3.10.C further requires that this verification be re-performed at least once every 12 hours.

3/4.10.D, Decay Time

Present Dresden and Quad Cities Technical Specifications do not contain requirements for decay time prior to core alterations. Proposed Specification 3/4.10.D, based on STS guidelines, is added to ensure sufficient control is present to prevent core alterations prior to the decay of short lived fission products.

3/4.10.E, Communications

Present Dresden and Quad Cities Technical Specifications do not contain requirements that direct communication be maintained between the control room and refueling floor personnel while in operational mode 5 during core alterations. Proposed Specification 3/4.10.E, based on STS guidelines, is added in order to address the necessary requirements for these conditions. Proposed LCO 3.10.E requires that direct communication be maintained between the control room and refueling floor personnel while in operational mode 5 during core alterations. When direct communication cannot be maintained between the control room and refueling floor personnel, proposed action 3.10.E requires immediate suspension of core alterations. In accordance with STS guidelines, proposed SR 4.10.E requires that direct communications between the control room and refueling floor personnel be demonstrated within one hour prior to the start of and at least once per 12 hours during core alterations.

3/4.10.F, Crane Travel

Specification 3/4.10.F is adopted from the STS and current specifications. Proposed Specification 3/4.10.F contains the restrictions on spent fuel cask handling. Proposed LCO 3.10.F contains provisions that require the spent fuel shipping cask be handled in the restricted mode. The surveillance requirements from the current Technical Specifications were retained because of design differences in the reactor building crane. Amendments made to Dresden and Quad Cities Technical Specifications incorporated the additional surveillances to address the Commissions concerns.

3/4.10.G, Water Level - Reactor Vessel

Present Dresden and Quad Cities Technical Specifications do not contain provisions for reactor vessel water level during handling of fuel assemblies or control rods within the reactor pressure vessel while in operational mode 5. Proposed Specification 3/4.10.G, based on STS guidelines, is added in order to address the necessary requirements for these conditions. Proposed LCO 3.10.G requires that 23 feet of water be maintained over the top of the reactor pressure vessel flange.

ATTACHMENT 2

The proposed LCO provides the minimum water level required during handling of fuel assemblies or control rods within the reactor pressure vessel while in operational mode 5. When this minimum reactor vessel water level cannot be satisfied, proposed action 3.10.G requires suspension of all operations involving handling of fuel assemblies or control rods within the reactor pressure vessel, after all fuel assemblies and control rods have been placed in a safe condition. In accordance with STS guidelines, proposed SR 4.10.G requires that the reactor vessel water level be at least at its minimum required depth within 2 hours prior to the start of and verified at least once per 24 hours during handling of fuel assemblies or control rods within the reactor pressure vessel.

3/4.10.H, Water Level - Spent Fuel Storage Pool

Present Specification 3/4.10.C, Fuel Storage Pool Water Level, is rewritten into an STS format using present provisions and STS action statements. Proposed LCO 3.10.H implements STS requirements to maintain at least 23 feet of water above the top of fuel stored in the fuel storage pool. The proposed applicability implements STS provisions of whenever irradiated fuel is stored in the fuel storage pool. Since present provisions do not contain remedial action statements, STS guidelines are adopted. Proposed action 3.10.H requires that with the spent fuel pool level not met, all operations involving handling of fuel assemblies and crane operations with loads in the spent fuel storage area be suspended, after the fuel assemblies and crane load is placed in a safe condition. Present surveillance requirement to record the fuel storage pool level at least once a day is changed to adopt the STS SR for recording fuel storage pool level at least once per 7 days.

3/4.10.I, Single Control Rod Removal

Proposed Specification 3/4.10.I is a rewrite of present Specification 3.10.D/4.10.D, Control Rod and Control Rod Drive Maintenance, using STS guidelines. Present Specification 3/4.10.D allows two control rods and/or control rod drive mechanisms to be removed for maintenance provided the reactor mode switch is locked in Refuel, shutdown margin requirements are met, and the required SRMs are operable. Proposed Specification 3/4.10.I implements STS guidelines which are more restrictive than present provisions. The proposed specification will allow only one control rod and/or control rod drive mechanism to be removed for maintenance at a time. Proposed LCO requirements also include requiring the reactor mode switch to be locked in the Shutdown or Refuel position, SRMs to be operable per Specification 3.10.B, shutdown margin requirements be met, and all other control rods in a five-by-five array centered on the control rod being removed are inserted and disarmed or the fuel assemblies in the affected core cell are removed. The proposed applicability is operational modes 4 and 5 in accordance with STS guidelines and clarifies present provisions to lock the reactor mode switch in the Refuel position. The proposed restrictions on a single control rod removal are sufficient to allow this maintenance to be performed in the specified operational modes. Proposed action 3.10.I is taken from STS guidelines since present

specifications do not contain remedial action requirements. Proposed action 3.10.I requires that with the provisions of the LCO not met, removal of the control rod and/or associated control rod drive mechanism from the core and/or reactor vessel be suspended and that action be initiated to restore the LCO provisions. Proposed surveillance requirement 4.10.I replaces present provisions which only address shutdown margin requirements. The proposed SRs require tests to be performed to demonstrate compliance with the conditions of the LCO within 4 hours prior to the start of a control rod and/or control rod drive mechanism removal from the core and/or reactor pressure vessel, and at least once per 24 hours thereafter until a control rod and associated control rod drive mechanism are reinstalled and the control rod is inserted in the core. The SRs include verifying the reactor mode switch is operable and locked in the Shutdown or Refuel position with the "one-rod-out" interlock operable. The SRs also verify that the required SRM channels are operable, shutdown margin requirements are met, rods in a five-by-five square array are inserted and disarmed or the affected core cell is defueled, and that all other control rods are inserted.

3/4.10.J, Multiple Control Rod Removal

Proposed Specification 3/4.10.J is a rewrite of present Specification 3/4.10.E, Extended Core Maintenance, using STS guidelines. The proposed specification contains provisions addressing the removal for maintenance of more than one control rod and/or control rod drive mechanism. The proposed use of STS guidelines for this specification will provide a more complete set of requirements for this maintenance task than are contained in present provisions. The proposed LCO allows any number of control rods and/or control rod drive mechanisms to be removed from the core and/or reactor vessel provided certain conditions are met. These conditions include having an operable reactor mode switch locked in the Shutdown or Refuel position, SRMs operable per Specification 3.10.B, shutdown margin requirements met, all other control rods inserted or their core cells defueled, and the core cell being worked on defueled. Proposed applicability of operational mode 5 follows STS guidelines and present intent of locking the reactor mode switch in Refuel for these operations. Proposed action 3.10.J is added from STS guidelines since present specifications do not contain remedial action requirements. Proposed action 3.10.J requires that with the provisions of the LCO not met, removal of the control rods and/or control rod drive mechanisms from the core and/or reactor vessel be suspended and that action be initiated to satisfy the above requirements. Proposed surveillance requirements in 4.10.J are based on STS guidelines and replace present provisions. Present provisions only require certification that a control rod's control cell contains no fuel assemblies prior to control rod withdrawal for extended core maintenance. The proposed SRs will verify all conditions specified in the LCO within 4 hours prior to the start of removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel and at least once per 24 hours thereafter until all control rods and control rod drive mechanisms are reinstalled and all control rods are inserted in the core. The conditions verified include that the reactor mode switch is operable and locked in the Shutdown or Refuel position, the SRM channels are operable per

Specification 3.10.B, shutdown margin requirements are met, all other control rods are either inserted or have the surrounding four fuel assemblies removed from the core cell, and the core cell on which maintenance is being performed is defueled. Proposed SR 4.10.J.2 implements STS guidelines and requires the performance of a functional test of the "one-rod-out" interlock following replacement of all control rods and/or control rod drive mechanisms, if this function had been bypassed.

Dresden and Quad Cities have different systems that are used for shutdown cooling purposes and therefore, the specifications will be slightly different. Dresden has a separate shutdown cooling system with 3 pumps and 3 heat exchangers per unit to remove decay heat from the reactor. Quad Cities utilizes the RHR system to remove decay heat. The predominate difference within the proposed specifications is that the Dresden system is throttable and can be configured to maintain a constant temperature. The RHR system at Quad Cities was not designed to permit throttling flow to maintain constant temperatures. Therefore, the STS cannot be directly applied to Quad Cities.

3/4.10.K, Shutdown Cooling and Coolant Circulation - High Water Level (Dresden)
3/4.10.L, Shutdown Cooling and Coolant Circulation - Low Water Level (Dresden)

Proposed specifications 3/4.10.K and 3/4.10.L are added to the Technical Specifications in accordance with STS to ensure that the required Shutdown Cooling subsystems are available for decay heat removal. The proposed LCO requires that at least one shutdown cooling system be operable and in operation in operational mode 5 when irradiated fuel is in the reactor vessel and water level is greater than 23 feet above the top of the reactor vessel flange. Proposed action 3.10.K.1 requires that with no shutdown cooling loops operable, within one hour demonstrate the operability of at least one alternate method capable of decay heat removal. In addition, proposed action 3.10.K.2 requires reactor coolant circulation by an alternate method when no shutdown cooling loops are available. The proposed SR is adopted from the STS.

Proposed specification 3/4.10.L is identical to specification 3/4.10.K except that two shutdown cooling loops are required to be operable in accordance with the STS.

3/4.10.K, Residual Heat Removal and Coolant Circulation - High Water Level (Quad)
3/4.10.L, Residual Heat Removal and Coolant Circulation - Low Water Level (Quad)

Proposed specifications 3/4.10.K and 3/4.10.L are added to the Technical Specifications in accordance with STS to ensure that the required residual heat removal (RHR) Shutdown Cooling subsystems are available for decay heat removal. The proposed LCO requires that at least one RHR shutdown cooling system be operable in operational mode 5 when irradiated fuel is in the reactor vessel and water level is greater than 23 feet above the top of the reactor vessel flange.

ATTACHMENT 2

The proposed LCO is different from the STS in that the LCO only requires the RHR shutdown cooling equipment to be operable and not necessarily in operation. Quad Cities shutdown cooling system was not designed to be a throttable system. The system configuration does not allow either the shutdown cooling flow or the service water cooling flow to be throttled sufficiently to maintain constant temperature. The system is cycled on and off as needed to maintain the reactor coolant temperature below the required limits. Proposed action 3.10.K.1 requires that with no RHR shutdown cooling loops operable, within one hour demonstrate the operability of at least one alternate method capable of decay heat removal. In addition, proposed action 3.10.K.2 requires reactor coolant circulation by an alternate method when no shutdown cooling loops are available. The proposed SR is adopted from the STS.

Proposed specification 3/4.10.L is identical to specification 3/4.10.K except that two RHR shutdown cooling loops are required to be operable in accordance with the STS.

The Bases for Section 3/4.10 are changed to implement the changes proposed above.