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RS-17-086

10 CFR 50.90

July 13, 2017

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Supplement to Dresden Nuclear Power Station, Units 2 and 3 Application to Revise Technical Specifications to Adopt TSTF-542, "Reactor Pressure Vessel Water Inventory Control"

References:

(1) Letter from P. R. Simpson (Exelon Generation Company, LLC (EGC)) to NRC, "Application to Revise Technical Specifications to Adopt TSTF-542, 'Reactor Pressure Vessel Water Inventory Control,'" dated February 10, 2017

(2) Letter from R. S. Haskell (NRC) to B. C. Hanson (EGC), "Dresden Nuclear Power Station, Units 2 and 3 - Request for Additional Information Related to License Amendment Request to Revise Technical Specifications to Adopt Technical Specification Task Force Traveler-542, Revision 2, 'Reactor Pressure Vessel Water Inventory Control' (CAC Nos. MF9295 and MF9296)," dated July 11, 2017

In Reference 1, Exelon Generation Company, LLC (EGC) submitted a request for amendments to the Technical Specifications (TS) for Dresden Nuclear Power Station (DNPS), Units 2 and 3. Specifically, EGC requested that the NRC complete its review and approval of the request to adopt TSTF-542 by August 1, 2017, in order to support its implementation prior to the upcoming DNPS, Unit 2 refueling outage in October 2017.

In Reference 2, the NRC determined that additional information is required to complete the evaluation of the Reference 1 request. The details of Reference 2 are contained in Attachment 1. Additionally, on May 26, 2017, the NRC issued Operating License Amendment Nos. 254 and 247 for DNPS, Units 2 and 3, respectively. These amendments allow for the adoption of TSTF-545, "TS Inservice Testing Program Removal and Clarify Surveillance Requirement Usage Rule Application to Section 5.5 Testing." Attachment 2 to this letter provides revised markups of the DNPS, Units 2 and 3 TS to address the issues identified in Reference 2, and the adoption of TSTF-545. These markups supersede those provided in Reference 1, Attachment 2. Attachment 3 provides the accompanying revised TS pages associated with the modifications shown in Attachment 2 as discussed above. Likewise, these

pages supersede those provided in Reference 1, Attachment 3. To account for the adoption of TSTF-545, the Inservice Testing Program definition is included in Attachments 2 and 3 on Page 1.1-3, and the Frequencies for Surveillance Requirements 3.6.1.3.5 and 3.6.1.3.6 were updated to account for this new TS definition as shown on Attachment 3, Page 3.6.1.3-7.

EGC has reviewed the information supporting a finding of no significant hazards consideration, and the environmental consideration, that were previously provided to the NRC in Reference 1. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

EGC is notifying the State of Illinois of this supplement to a previous application for a change to the TS by sending a copy of this letter and its attachment to the designated State Official in accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b).

Based on the NRC's review timeline associated with the Reference 1 request and recent telephone conversations with the Office of Nuclear Reactor Regulation Project Manager for DNPS, Units 2 and 3, Russell Haskell, it does not appear that the Reference 1 request will be approved with adequate time to implement the changes ahead of the October 2017 DNPS, Unit 2 refueling outage. Therefore, EGC hereby proposes that once the Reference 1 request is approved, the amendments shall be implemented for DNPS, Units 2 and 3 prior to the beginning of the next Unit 3 refueling outage, D3R25, currently planned for October 2018.

There are no regulatory commitments contained within this letter. Should you have any questions concerning this letter, please contact Mr. Mitchel A. Mathews at (630) 657-2819.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 13th day of July 2017.

Respectfully,

Patrick R. Simpson
Manager – Licensing
Exelon Generation Company, LLC

Attachments:
1. Details of NRC Request for Additional Information
2. Proposed Technical Specifications Changes (Mark-Up)
3. Revised Technical Specifications Pages

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector – Dresden Nuclear Power Station
Illinois Emergency Management Agency – Division of Nuclear Safety

Dresden Nuclear Power Station, Units 2 and 3

Supplement to Dresden Nuclear Power Station, Units 2 and 3 Application to Revise Technical Specifications to Adopt TSTF-542, "Reactor Pressure Vessel Water Inventory Control"

ATTACHMENT 1 –

DETAILS OF NRC REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENT 1 - DETAILS OF NRC REQUEST FOR ADDITIONAL INFORMATION

REQUEST FOR ADDITIONAL INFORMATION

REGARDING PROPOSED LICENSE AMENDMENT

APPLICATION TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TECHNICAL

SPECIFICATION TASK FORCE TRAVELER-542. REVISION 2.

"REACTOR PRESSURE VESSEL WATER INVENTORY CONTROL"

EXELON GENERATION COMPANY. LLC

DRESDEN NUCLEAR POWER STATION - UNITS 2 AND 3

DOCKET NOS. 50-237 AND 50-249

By application dated February 10, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 17045A006), Exelon Generation Company, LLC (EGC, the licensee), requested to adopt Technical Specifications Task Force (TSTF) Traveler (TSTF-542), "Reactor Pressure Vessel [RPV] Water Inventory Control [WIC]," Revision 2, which would change the technical specifications (TSs) for Dresden Nuclear Power Station, Units 2 and 3. TSTF-542, Revision 2, was approved by the U.S. Nuclear Regulatory Commission (NRC) on December 20, 2016 (ADAMS Accession No. ML 16343B008). The proposed changes would replace the existing requirements in the TSs related to "operations with the potential to drain the reactor pressure vessel" with revised TSs providing an alternative for RPV WIC. These alternative requirements would protect Safety Limit 2.1.1.3, which requires RPV water level to be greater than the top of active fuel. The NRC staff has reviewed the information the licensee provided that supports the proposed amendment. The staff requests the licensee to address the following issues:

DNPS-RAI-1:

Background:

In Attachment 2, pg. 3.5.2-1 (of the submittal), the staff identified a discrepancy in the limiting condition for operation (LCO) 3.5.2, Applicability proposed markup. The current TS LCO consists of text not shown in the proposed LCO markup as being deleted. Specifically, there is missing text associated with the MODE 5 exception (i.e., "except with the spent fuel storage pool gates removed and water level ~ 23 ft. over the top of the reactor pressure vessel flange").

Request:

Please correct the proposed TS markup as appropriate.

Exelon Generation Company, LLC (EGC) Response

The requested change is incorporated in the revised markup included in Attachment 2 on Page 3.5.2-1.

DNPS-RAI-2:

Background:

In Attachment 2, pg. 3.5.2-6 (of the submittal), the NRC staff identified a discrepancy. The current TS surveillance requirement (SR) consists of text not shown in the proposed SR markup as being deleted. Specifically, SR 3.5.2.4 is missing the operating parameter data (i.e., System, Flow Rate, Pumps, Pressure), as per TSTF-542, Revision 2.

Request:

Please correct the proposed TS markup as appropriate.

EGC Response

The requested change is incorporated in the revised markup included in Attachment 2 on Page 3.5.2-5.

Additionally, the Surveillance Frequencies for the proposed SR 3.5.2.5 and SR 3.5.2.6 were revised to "In accordance with the Surveillance Frequency Control Program" versus "In accordance with the Inservice Testing Program." This corrects an error in the February 10, 2017, EGC submittal and aligns with TSTF-542.

DNPS-RAI-3:

Background:

In Attachment 2, pg. 3.5.2-6 (of the submittal), the NRC staff identified a discrepancy. The current TS SR consists of text not shown in the proposed SR markup as being deleted. Specifically, SR 3.5.2.5 is missing from the proposed markup page.

Request:

Please correct the proposed TS markup as appropriate.

EGC Response

The requested change is incorporated in the revised markup included in Attachment 2 on Page 3.5.2-5.

DNPS-RAI-4:

Background:

In Attachment 2 (of the submittal), the NRC staff identified a discrepancy. SR 3.8.2.1 (note 2) has not been revised to show the new title for LCO 3.5.2.

Request:

Please correct the proposed TS markup as appropriate.

EGC Response

The requested change is incorporated in the revised markup and revised page on Page 3.8.2-3 included in Attachments 2 and 3, respectively.

Dresden Nuclear Power Station, Units 2 and 3

Supplement to Dresden Nuclear Power Station, Units 2 and 3 Application to Revise Technical Specifications to Adopt TSTF-542, "Reactor Pressure Vessel Water Inventory Control"

ATTACHMENT 2 - PROPOSED TECHNICAL SPECIFICATIONS CHANGES (MARK-UP)

1.1-2
1.1-3
1.1-4
1.1-5
1.1-6
1.1-7

3.5.2-1
3.5.2-2
3.5.2-3
3.5.2-4
3.5.2-5

3.8.2-2
3.8.2-3

1.1 Definitions (continued)

CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS: a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and b. Control rod movement, provided there are no fuel assemblies in the associated core cell. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The dose conversion factors used for this calculation shall be the inhalation committed dose conversion factors in Federal Guidance Report 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," 1989.

(continued)

1.1 Definitions (continued)

INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).
DRAIN TIME	*The DRAIN TIME is the time it would take for the water inventory in and above the Reactor Pressure Vessel (RPV) to drain to the top of the active fuel (TAF) seated in the RPV assuming:* *a. The water inventory above the TAF is divided by the limiting drain rate;* *b. The limiting drain rate is the larger of the drain rate through a single penetration flow path with the highest flow rate, or the sum of the drain rates through multiple penetration flow paths susceptible to a common mode failure (e.g., seismic event, loss of normal power, single human error), for all penetration flow paths below the TAF except:* *1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are locked, sealed, or otherwise secured in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths;* *2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the TAF when actuated by RPV water level isolation instrumentation; or*

(continued)

1.1 Definitions

DRAIN TIME (continued)	*3. Penetration flow paths with isolation devices that can be closed prior to the RPV water level being equal to the TAF by a dedicated operator trained in the task, who is in continuous communication with the control room, is stationed at the controls, and is capable of closing the penetration flow path isolation device without offsite power.* *c. The penetration flow paths required to be evaluated per paragraph b) are assumed to open instantaneously and are not subsequently isolated, and no water is assumed to be subsequently added to the RPV water inventory;* *d. No additional draining events occur; and* *e. Realistic cross-sectional areas and drain rates are used.* *A bounding DRAIN TIME may be used in lieu of a calculated value.*
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE into the drywell, such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; or 2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; b. <u>Unidentified LEAKAGE</u> All LEAKAGE into the drywell that is not identified LEAKAGE;

(continued)

1.1 Definitions

LEAKAGE (continued)	c. Total LEAKAGE Sum of the identified and unidentified LEAKAGE; and d. Pressure Boundary LEAKAGE LEAKAGE through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall.
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE—OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water,

(continued)

1.1 Definitions

OPERABLE—OPERABILITY (continued)	lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2957 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from the opening of the sensor contact until the opening of the trip actuator. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical throughout the operating cycle assuming that: a. The reactor is xenon free; b. The moderator temperature is $\geq$ 68°F, corresponding to the most reactive state; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.
TURBINE BYPASS SYSTEM RESPONSE TIME	The TURBINE BYPASS SYSTEM RESPONSE TIME shall be that time interval from when the turbine bypass control unit generates a turbine bypass valve flow signal until the turbine bypass valves travel to their required positions. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTOR MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	Run	NA
2	Startup	Refuel[a] or Startup/Hot Standby	NA
3	Hot Shutdown[a]	Shutdown	> 212
4	Cold Shutdown[a]	Shutdown	≤ 212
5	Refueling[b]	Shutdown or Refuel	NA

(a) All reactor vessel head closure bolts fully tensioned.

(b) One or more reactor vessel head closure bolts less than fully tensioned.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS), *REACTOR PRESSURE VESSEL (RPV) WATER INVENTORY CONTROL,* AND ISOLATION CONDENSER (IC) SYSTEM

3.5.2 ~~ECCS–Shutdown~~*RPV Water Inventory Control*

LCO 3.5.2 *DRAIN TIME of RPV water inventory to the top of active fuel (TAF) shall be ≥ 36 hours.*

AND

~~Two~~ *One* low pressure ECCS injection/spray subsystems shall be OPERABLE.

APPLICABILITY: MODE*S* 4 *and 5.*~~,~~
~~MODE 5, except with the spent fuel storage pool gates removed and water level ≥ 23 ft over the top of the reactor pressure vessel flange.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ~~One r~~*R*equired ECCS injection/spray subsystem inoperable.	A.1 Restore required ECCS injection/spray subsystem to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to *establish a method of water injection capable of operating without offsite electrical power.*~~suspend operations with a potential for draining the reactor vessel (OPDRVs).~~	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. DRAIN TIME < 36 hours and ≥ 8 hours.	C.1 Verify secondary containment boundary is capable of being established in less than the DRAIN TIME. AND	4 hours
	C.2 Verify each secondary containment penetration flow path is capable of being isolated in less than the DRAIN TIME. AND	4 hours
	C.3 Verify one standby gas treatment subsystem is capable of being placed in operation in less than the DRAIN TIME.	4 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. *DRAIN TIME < 8 hours.* ~~Required Action C.2 and associated Completion Time not met.~~	*D.1* ------- *NOTE* -------- *Required ECCS injection/spray subsystem or additional method of water injection shall be capable of operating without offsite electrical power.* ----------	
	~~D.1~~ Initiate action to *establish an additional method of water injection with water sources capable of maintaining RPV water level > TAF for ≥ 36 hours.* ~~restore secondary containment to OPERABLE status.~~	Immediately
	AND	
	D.2 Initiate action to *establish secondary containment boundary* ~~restore one standby gas treatment subsystem to OPERABLE status~~.	Immediately
	AND	
	D.3 Initiate action to ~~restore isolation~~*isolate each* ~~capability in each required~~ secondary containment penetration flow path ~~not~~ *or verify it can be manually* isolated *from the control room*.	*Immediately*
	AND	
	D.4 Initiate action to verify one standby gas treatment system is capable of being placed in operation.	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition C or D not met. *OR* *DRAIN TIME < 1 hour.*	*E.1 Initiate action to restore DRAIN TIME to ≥ 36 hours.*	*Immediately*

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	*Verify DRAIN TIME ≥ 36 hours.*	*In accordance with the Surveillance Frequency Control Program*
SR 3.5.2.~~1~~*2*	Verify, for ~~each~~ *the* required ECCS injection/spray subsystem, the: a. Suppression pool water level is ≥ 10 ft 4 inches; or b. ~~----------NOTE---------- Only one required ECCS injection/spray subsystem may take credit for this option during OPDRVs. ----------~~ Contaminated condensate storage tanks water volume is ≥ 140,000 available gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.~~2~~*3*	Verify, for ~~each~~ *the* required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.~~3~~*4*	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ----------	
	Verify ~~each~~ *for the* required ECCS injection/spray subsystem *each* manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
~~SR 3.5.2.4~~	~~Verify each required ECCS pump develops the specified flow rate against a test line pressure corresponding to the specified reactor pressure.~~ ~~TEST LINE PRESSURE~~ ~~SYSTEM FLOW RATE NO. OF PUMPS CORRESPONDING TO A REACTOR PRESSURE OF~~ ~~CS ≥ 4500 gpm 1 ≥ 90 psig~~ ~~LPCI ≥ 4500 gpm 1 ≥ 20 psig~~	~~In accordance with the Inservice Testing Program~~
SR 3.5.2.5	*Operate the required ECCS injection/spray subsystem through the recirculation line for ≥ 10 minutes.*	*In accordance with the Surveillance Frequency Control Program*
SR 3.5.2.6	*Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.*	*In accordance with the Surveillance Frequency Control Program*
SR 3.5.2.~~5~~*7*	----------NOTE---------- Vessel injection/spray may be excluded. ----------	
	Verify ~~each~~ *the* required ECCS injection/spray subsystem ~~actuates on an actual or simulated automatic initiation signal~~*can be manually operated*.	In accordance with the Surveillance Frequency Control Program

ACTIONS

----------NOTE----------
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	----------NOTE---------- Enter applicable Condition and Required Actions of LCO 3.8.8, when any required division is de-energized as a result of Condition A. ----------	
	A.1 Declare affected required feature(s), with no offsite power available, inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately
	~~AND~~	
	~~A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs).~~	~~Immediately~~
	AND	
	A.2.~~4~~*3* Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required DG inoperable.	B.1 Suspend CORE ALTERATIONS. AND	Immediately
	B.2 Suspend movement of recently irradiated fuel assemblies in secondary containment. ~~AND~~	Immediately
	~~B.3 Initiate action to suspend OPDRVs.~~ AND	~~Immediately~~
	B.~~4~~3 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	----------NOTES---------- 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, and SR 3.8.1.14 through SR 3.8.1.19. 2. SR 3.8.1.13 and SR 3.8.1.19 are not required to be met when associated ECCS subsystem(s) are not required to be OPERABLE per LCO 3.5.2, "*RPV Water Inventory Control*~~ECCS—Shutdown~~." ----------	
	For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except SR 3.8.1.9, SR 3.8.1.20, and SR 3.8.1.21 are applicable.	In accordance with applicable SRs

Dresden Nuclear Power Station, Units 2 and 3

Supplement to Dresden Nuclear Power Station, Units 2 and 3 Application to Revise Technical Specifications to Adopt TSTF-542, "Reactor Pressure Vessel Water Inventory Control"

ATTACHMENT 3 - REVISED TECHNICAL SPECIFICATIONS PAGES

1.1-2
1.1-3
1.1-4
1.1-5
1.1-6
1.1-7

3.5.1-1
3.5.2-1
3.5.2-2
3.5.2-3
3.5.2-4
3.5.2-5

3.6.1.3-7

3.8.2-3

1.1 Definitions (continued)

CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps.
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CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The dose conversion factors used for this calculation shall be the inhalation committed dose conversion factors in Federal Guidance Report 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," 1989.

(continued)

1.1 Definitions (continued)

INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).
DRAIN TIME	The DRAIN TIME is the time it would take for the water inventory in and above the Reactor Pressure Vessel (RPV) to drain to the top of the active fuel (TAF) seated in the RPV assuming: a. The water inventory above the TAF is divided by the limiting drain rate; b. The limiting drain rate is the larger of the drain rate through a single penetration flow path with the highest flow rate, or the sum of the drain rates through multiple penetration flow paths susceptible to a common mode failure (e.g., seismic event, loss of normal power, single human error), for all penetration flow paths below the TAF except: 1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are locked, sealed, or otherwise secured in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths; 2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the TAF when actuated by RPV water level isolation instrumentation; or

(continued)

1.1 Definitions

DRAIN TIME (continued)	3. Penetration flow paths with isolation devices that can be closed prior to the RPV water level being equal to the TAF by a dedicated operator trained in the task, who is in continuous communication with the control room, is stationed at the controls, and is capable of closing the penetration flow path isolation device without offsite power. c. The penetration flow paths required to be evaluated per paragraph b) are assumed to open instantaneously and are not subsequently isolated, and no water is assumed to be subsequently added to the RPV water inventory; d. No additional draining events occur; and e. Realistic cross-sectional areas and drain rates are used. A bounding DRAIN TIME may be used in lieu of a calculated value.
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE into the drywell, such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; or 2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; b. <u>Unidentified LEAKAGE</u> All LEAKAGE into the drywell that is not identified LEAKAGE;

(continued)

1.1 Definitions

LEAKAGE (continued)	c. Total LEAKAGE Sum of the identified and unidentified LEAKAGE; and d. Pressure Boundary LEAKAGE LEAKAGE through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall.
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE—OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water,

(continued)

1.1 Definitions

OPERABLE—OPERABILITY (continued)	lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2957 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from the opening of the sensor contact until the opening of the trip actuator. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical throughout the operating cycle assuming that: a. The reactor is xenon free; b. The moderator temperature is $\geq$ 68°F, corresponding to the most reactive state; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.
TURBINE BYPASS SYSTEM RESPONSE TIME	The TURBINE BYPASS SYSTEM RESPONSE TIME shall be that time interval from when the turbine bypass control unit generates a turbine bypass valve flow signal until the turbine bypass valves travel to their required positions. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTOR MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	Run	NA
2	Startup	Refuel[a] or Startup/Hot Standby	NA
3	Hot Shutdown[a]	Shutdown	> 212
4	Cold Shutdown[a]	Shutdown	≤ 212
5	Refueling[b]	Shutdown or Refuel	NA

(a) All reactor vessel head closure bolts fully tensioned.

(b) One or more reactor vessel head closure bolts less than fully tensioned.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS), REACTOR PRESSURE VESSEL (RPV) WATER INVENTORY CONTROL, AND ISOLATION CONDENSER (IC) SYSTEM

3.5.2 RPV Water Inventory Control

LCO 3.5.2 DRAIN TIME of RPV water inventory to the top of active fuel (TAF) shall be ≥ 36 hours.

AND

One low pressure ECCS injection/spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 4 and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required ECCS injection/spray subsystem inoperable.	A.1 Restore required ECCS injection/spray subsystem to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to establish a method of water injection capable of operating without offsite electrical power.	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. DRAIN TIME < 36 hours and ≥ 8 hours.	C.1 Verify secondary containment boundary is capable of being established in less than the DRAIN TIME.	4 hours
	AND	
	C.2 Verify each secondary containment penetration flow path is capable of being isolated in less than the DRAIN TIME.	4 hours
	AND	
	C.3 Verify one standby gas treatment subsystem is capable of being placed in operation in less than the DRAIN TIME.	4 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. DRAIN TIME < 8 hours.	D.1	------- NOTE -------- Required ECCS injection/spray subsystem or additional method of water injection shall be capable of operating without offsite electrical power. ---------- Initiate action to establish an additional method of water injection with water sources capable of maintaining RPV water level > TAF for ≥ 36 hours.	Immediately
	AND		
	D.2	Initiate action to establish secondary containment boundary.	Immediately
	AND		
	D.3	Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room.	Immediately
	AND		
	D.4	Initiate action to verify one standby gas treatment system is capable of being placed in operation.	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition C or D not met. OR DRAIN TIME < 1 hour.	E.1 Initiate action to restore DRAIN TIME to ≥ 36 hours.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify DRAIN TIME ≥ 36 hours.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.2	Verify, for the required ECCS injection/spray subsystem, the: a. Suppression pool water level is ≥ 10 ft 4 inches; or b. Contaminated condensate storage tanks water volume is ≥ 140,000 available gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.3	Verify, for the required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.4	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify for the required ECCS injection/spray subsystem each manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.5	Operate the required ECCS injection/spray subsystem through the recirculation line for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.6	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify the required ECCS injection/spray subsystem can be manually operated.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment manual isolation valve and blind flange that is located inside primary containment and not locked sealed, or otherwise secured and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days
SR 3.6.1.3.4	Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.5	Verify the isolation time of each power operated, automatic PCIV, except for MSIVs, is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.1.3.6	Verify the isolation time of each MSIV is ≥ 3 seconds and ≤ 5 seconds.	In accordance with the INSERVICE TESTING PROGRAM

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required DG inoperable.	B.1 Suspend CORE ALTERATIONS. AND	Immediately
	B.2 Suspend movement of recently irradiated fuel assemblies in secondary containment. AND	Immediately
	B.3 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	----------NOTES---------- 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, and SR 3.8.1.14 through SR 3.8.1.19. 2. SR 3.8.1.13 and SR 3.8.1.19 are not required to be met when associated ECCS subsystem(s) are not required to be OPERABLE per LCO 3.5.2, "RPV Water Inventory Control." ----------	
	For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except SR 3.8.1.9, SR 3.8.1.20, and SR 3.8.1.21 are applicable.	In accordance with applicable SRs