Exelon Generation

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10 CFR 50.90

RS-13-200
RA-13-070

August 2, 2013

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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

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

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
NRC Docket No. 50-219

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Application to Revise Technical Specifications to Adopt TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs"

References:

1. TSTF-535-A, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," dated August 8, 2011

2. Notice of Availability of the "Models for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF–535, Revision 0, 'Revise Shutdown Margin Definition to Address Advanced Fuel Designs,' Using the Consolidated Line Item Improvement Process," dated February 26, 2013

Pursuant to 10 CFR 50.90, Exelon Generation Company, LLC (EGC) is submitting a request for an amendment to the Technical Specifications (TS) for the operating licenses listed above.

The proposed amendment modifies the TS definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling Water Reactor (BWR) fuel designs that may be more reactive at shutdown temperatures above 68°F.

Attachment 1 provides a description and assessment of the proposed changes. Attachment 2 provides the existing TS pages marked up to show the proposed changes.

These proposed changes have been reviewed and approved by each station's Plant Operations Review Committee and by the Nuclear Safety Review Board in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests approval of the proposed amendment by August 2, 2014. Once approved, the amendment shall be implemented within 60 days.

There are no regulatory commitments contained in this letter.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is notifying the States of Illinois, New Jersey, and Pennsylvania of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

Should you have any questions concerning this letter, please contact Ms. Wendy E. Croft at (610) 765-5726.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 2nd day of August 2013.

Respectfully,

James Barstow
Director, Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachments:
1. Description and Assessment
2. Proposed Technical Specifications Changes (Mark-Up)

cc: Regional Administrator - NRC Region I
Regional Administrator - NRC Region III
J. S. Wiebe - NRC Project Manager, NRR - (Exelon Fleet)
NRC Senior Resident Inspector - Clinton Power Station
NRC Senior Resident Inspector - Dresden Nuclear Power Station
NRC Senior Resident Inspector - LaSalle County Station
NRC Senior Resident Inspector - Limerick Generating Station
NRC Senior Resident Inspector - Oyster Creek Nuclear Generating Station
NRC Senior Resident Inspector - Peach Bottom Atomic Power Station
NRC Senior Resident Inspector - Quad Cities Nuclear Power Station
NRC Project Manager, NRR - Clinton Power Station
NRC Project Manager, NRR - Dresden Nuclear Power Station
NRC Project Manager, NRR - LaSalle County Station
NRC Project Manager, NRR - Limerick Generating Station
NRC Project Manager, NRR - Oyster Creek Nuclear Generating Station
NRC Project Manager, NRR - Peach Bottom Atomic Power Station
NRC Project Manager, NRR - Quad Cities Nuclear Power Station
Illinois Emergency Management Agency - Division of Nuclear Safety
Director, Bureau of Radiation Protection - Pennsylvania Department of Environmental Resources
Director, Bureau of Nuclear Engineering, New Jersey Department of Environmental Protection
Mayor of Lacey Township, Forked River, NJ
S. T. Gray, State of Maryland
R. R. Janati, Commonwealth of Pennsylvania

ATTACHMENT 1

Description and Assessment

ATTACHMENT 1
Description and Assessment

1.0 DESCRIPTION

The proposed amendment modifies the Technical Specifications (TS) definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling Water Reactor (BWR) fuel designs that may be more reactive at shutdown temperatures above 68°F.

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

Exelon Generation Company, LLC (EGC) has reviewed the model safety evaluation dated February 19, 2013, as part of the Federal Register Notice of Availability. This review included a review of the NRC's evaluation, as well as the information provided in TSTF-535. As described in the subsequent paragraphs, EGC has concluded that the justifications presented in the TSTF-535 proposal and the model safety evaluation prepared by the NRC are applicable to Clinton Power Station (CPS), Unit 1; Dresden Nuclear Power Station (DNPS), Units 2 and 3; LaSalle County Station (LSCS), Units 1 and 2; Limerick Generating Station (LGS), Units 1 and 2; Oyster Creek Nuclear Generating Station (OCNGS), Unit 1; Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3; and Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2, and justify this amendment for the incorporation of the changes to the plant TS.

The Traveler and model safety evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). DNPS, OCNGS, PBAPS, and QCNPS were not licensed to the 10 CFR 50, Appendix A, GDC. The DNPS, PBAPS, and QCNPS Updated Final Safety Analysis Reports (UFSAR) provide an assessment against the draft GDC published in 1967. The OCNGS UFSAR provides an assessment against the 10 CFR 50.34, Appendix A, General Design Criteria for Nuclear Power Plants, in effect on July 7, 1971. A review has determined that the plant-specific requirements are sufficiently similar to the Appendix A GDC as related to the proposed change. Listed below are the plant specific references from the UFSARs that provide the 10 CFR 50, Appendix A, GDC assessments:

- DNPS, UFSAR, Section 3.1, "Conformance with NRC General Design Criteria"
- OCNGS, UFSAR, Section 3.1, "Conformance with NRC General Design Criteria"
- PBAPS, UFSAR, Appendix H, "Conformance to AEC (NRC) Criteria"
- QCNPS, UFSAR, Section 3.1, "Conformance with NRC General Design Criteria"

Therefore, the proposed change is applicable to DNPS, OCNGS, PBAPS, and QCNPS.

2.2 Optional Changes and Variations

EGC is not proposing any significant variations or deviations from the TS changes described in TSTF-535, Revision 0, or the applicable parts of the NRC's model safety evaluation dated February 19, 2013.

EGC is noting the following minor variations:

- The OCNGS TS definition of SDM is being updated to correspond with the wording and format proposed in TSTF-535, Revision 0. OCNGS's TS are Custom TS and, therefore, the current SDM definition wording and format varies slightly from the NRC Standard Technical Specifications (STS) (NUREG-1433) shown in TSTF-535, Revision 0, and the applicable parts of the NRC's model safety evaluation. The minor variations are administrative and do not affect the applicability of TSTF-535 to the OCNGS TS.

- The LGS TS definition of SDM is being updated to correspond with the wording and format proposed in TSTF-535, Revision 0. LGS's TS are based on the previous version of the NRC's STS (NUREG-0123) and, therefore, the wording and format varies slightly from the NRC STS (NUREG-1433) shown in TSTF-535, Revision 0, and the applicable parts of the NRC's model safety evaluation. The minor variations are administrative and do not affect the applicability of TSTF-535 to the LGS TS.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

EGC requests adoption of TSTF-535, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," which is an approved change to the STS, into the Clinton Power Station, Unit 1; Dresden Nuclear Power Station, Units 2 and 3; LaSalle County Station, Units 1 and 2; Limerick Generating Station, Units 1 and 2; Oyster Creek Nuclear Generating Station, Unit 1; Peach Bottom Atomic Power Station, Units 2 and 3; and Quad Cities Nuclear Power Station Units 1 and 2 TS. The proposed amendment modifies the TS definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle.

EGC has evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change revises the definition of SDM. SDM is not an initiator of any accident previously evaluated. Accordingly, the proposed change to the definition of SDM has no effect on the probability of any accident previously evaluated. SDM is an assumption in the analysis of some previously evaluated accidents and inadequate SDM could lead to an increase in consequences of those accidents. However, the proposed change revises the SDM definition to ensure that the correct SDM is determined for all fuel types at all times during the fuel cycle. As a result, the proposed change does not adversely affect the consequences of any accident previously evaluated.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change revises the definition of SDM. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The change does not alter assumptions made in the safety analysis regarding SDM.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   The proposed change revises the definition of SDM. The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The proposed change ensures that the SDM assumed in determining safety limits, limiting safety system settings or limiting conditions for operation is correct for all BWR fuel types at all times during the fuel cycle.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, EGC concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

3.2 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

4.0 ENVIRONMENTAL CONSIDERATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

5.0 REFERENCES

5.1 TSTF-535-A, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," dated August 8, 2011

5.2 Notice of Availability of the "Models for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF–535, Revision 0, 'Revise Shutdown Margin Definition to Address Advanced Fuel Designs,' Using the Consolidated Line Item Improvement Process," dated February 26, 2013

ATTACHMENT 2
Proposed Technical Specifications Changes (Mark-Up)

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30

MARK-UP TECHNICAL SPECIFICATIONS PAGE

Clinton Power Station, Unit 1, Page 1.0-6
Dresden Nuclear Power Station, Units 2 and 3, Page 1.1-5
LaSalle County Station, Units 1 and 2, Page 1.1-6
Limerick Generating Station, Units 1 and 2, Page 1-7
Oyster Creek Nuclear Generating Station, Page 1.0-8
Peach Bottom Atomic Power Station, Units 2 and 3, Page 1.1-5
Quad Cities Nuclear Power Station, Units 1 and 2, Page 1.1-5

1.1 Definitions (continued)

throughout the operating cycle

SHUTDOWN MARGIN (SDM)

SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that:

a. The reactor is xenon free;

b. The moderator temperature is ≥ 68°F~~,~~ ~~and~~ , 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.

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.

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 consists of two components:

a. The time from initial movement of the main turbine stop valve or control valve until 80% of the turbine bypass capacity is established; and

b. The time from initial movement of the main turbine stop valve or control valve until initial movement of the turbine bypass valve.

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.

1.1 Definitions (continued)

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 ≥ 68°F~~;~~ ~~and~~ , 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.

1.1 Definitions (continued)

REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. 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. In lieu of measurement, response time may be verified for selected components provided that the components and method for verification have been previously reviewed and approved by the NRC.
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 ≥ 68°F~~;~~ ~~and~~ , 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.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

(continued)

REFUELING FLOOR SECONDARY CONTAINMENT INTEGRITY (Continued)

1. Capable of being closed by an OPERABLE secondary containment automatic isolation system, or

2. Closed by at least one manual valve, blind flange, slide gate damper, or deactivated automatic valve secured in its closed position, except as provided by Specification 3.6.5.2.2.

b. All refueling floor secondary containment hatches and blowout panels are closed and sealed.

c. The standby gas treatment system is in compliance with the requirements of specification 3.6.5.3.

d. At least one door in each access to the refueling floor secondary containment is closed.

e. The sealing mechanism associated with each refueling floor secondary containment penetration, e.g., welds, bellows, or O-rings, is OPERABLE.

f. The pressure within the refueling floor secondary containment is less than or equal to the value required by Specification 4.6.5.1.2a.

REPORTABLE EVENT

1.37 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

RESTRICTED AREA

1.37a RESTRICTED AREA means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. RESTRICTED AREA does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a RESTRICTED AREA.

ROD DENSITY

1.38 ROD DENSITY shall be the number of control rod notches inserted as a fraction of the total number of control rod notches. All rods fully inserted is equivalent to 100% ROD DENSITY.

SHUTDOWN MARGIN

1.39 ~~SHUTDOWN MARGIN shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming all control rods are fully inserted except for the single control rod of highest reactivity worth which is assumed to be fully withdrawn and the reactor is in the shutdown condition; cold, i.e. 68°F; and xenon free.~~

Insert 1

SITE BOUNDARY

1.40 The SITE BOUNDARY shall be that line as defined in Figure 5.1.3-1a.

SOURCE CHECK

1.41 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

REFUELING FLOOR SECONDARY CONTAINMENT INTEGRITY (Continued)

1. Capable of being closed by an OPERABLE secondary containment automatic isolation system, or

2. Closed by at least one manual valve, blind flange, slide gate damper or deactivated automatic valve secured in its closed position, except as provided by Specification 3.6.5.2.2.

b. All refueling floor secondary containment hatches and blowout panels are closed and sealed.

c. The standby gas treatment system is in compliance with the requirements of Specification 3.6.5.3.

d. At least one door in each access to the refueling floor secondary containment is closed.

e. The sealing mechanism associated with each refueling floor secondary containment penetration, e.g., welds, bellows, or O-rings, is OPERABLE.

f. The pressure within the refueling floor secondary containment is less than or equal to the value required by Specification 4.6.5.1.2a.

REPORTABLE EVENT

1.37 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

RESTRICTED AREA

1.37a RESTRICTED AREA means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. RESTRICTED AREA does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a RESTRICTED AREA.

ROD DENSITY

1.38 ROD DENSITY shall be the number of control rod notches inserted as a fraction of the total number of control rod notches. All rods fully inserted is equivalent to 100% ROD DENSITY.

SHUTDOWN MARGIN

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Insert 1

SITE BOUNDARY

1.40 The SITE BOUNDARY shall be that line as defined in Figure 5.1.3-1a.

SOURCE CHECK

1.41 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

1.42 AVERAGE PLANAR LINEAR HEAT GENERATION RATE

The AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR) shall be applicable to a specific planar height and is equal to the sum of the heat generation rate per unit length of fuel rod for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle at that height.

1.43 CORE OPERATING LIMITS REPORT

The Oyster Creek CORE OPERATING LIMITS REPORT (COLR) is the document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.f. Plant operation within these operating limits is addressed in individual specifications.

1.44 LOCAL LINEAR HEAT GENERATION RATE

The LOCAL LINEAR HEAT GENERATION RATE (LLHGR) shall be applicable to a specific planar height and is equal to the AVERAGE PLANAR LINEAR GENERATION RATE (APLHGR) at the specified height multiplied by the local peaking factor at that height.

1.45 SHUTDOWN MARGIN (SDM)

~~SHUTDOWN MARGIN is the amount of reactivity by which the reactor would be subcritical when the control rod with the highest reactivity worth is fully withdrawn, all other operable control rods are fully inserted, all inoperable control rods are at their current position, reactor water temperature is 68§F, and the reactor fuel is xenon free. Determination of the control rod with the highest reactivity worth includes consideration of any inoperable control rods which are not fully inserted.~~

Insert 1

1.46 IDLE RECIRCULATION LOOP

A recirculation loop is idle when its discharge valve is in the closed position and its discharge bypass valve and suction valve are in the open position.

1.47 ISOLATED RECIRCULATION LOOP

A recirculation loop is fully isolated when the suction valve, discharge valve and discharge bypass valve are in the closed position.

1.48 OPERATIONAL CONDITION

The reactor plant operational status as to criticality, reactor mode switch position, reactor coolant temperature, and/or specific system status. These conditions consist of POWER OPERATION, STARTUP MODE, SHUTDOWN CONDITION, COLD SHUTDOWN CONDITION, and REFUEL MODE. A change or entry into an operating condition is signified by movement of the reactor mode switch or a change in reactor coolant temperature from <212°F to ≥212°F.

Insert 1

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 ≥ 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.

1.1 Definitions

PHYSICS TESTS (continued)	b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3514 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from the opening of the sensor contact up to and including the opening of the trip actuator contacts.
RECENTLY IRRADIATED FUEL	RECENTLY IRRADIATED FUEL is fuel that has occupied part of a critical reactor core within the previous 24 hours. When using this definition to suspend the Applicability of LCOs, secondary containment ground-level hatches H15, H16, H17, H18, H19, and H33 shall be closed during the movement of any irradiated fuel in Secondary Containment.
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 ≥ 68°F, corresponding to the most reactive state; ~~and~~ 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.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

(continued)

1.1 Definitions

PHYSICS TESTS (continued)	b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3514 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from the opening of the sensor contact up to and including the opening of the trip actuator contacts.
RECENTLY IRRADIATED FUEL	RECENTLY IRRADIATED FUEL is fuel that has occupied part of a critical reactor core within the previous 24 hours. When using this definition to suspend the Applicability of LCOs, secondary containment ground-level hatches H20, H21, H22, H23, H24, and H34 shall be closed during the movement of any irradiated fuel in Secondary Containment.
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 ≥ 68°F~~; and~~ , 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.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

(continued)

1.1 Definitions

OPERABLE—OPERABILITY (continued)	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 ≥ 68°F~~;~~ ~~and~~ , 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.

(continued)