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SERIAL: BSEP 00-0113
TSC 00TSC09

10 CFR 50.90

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light (CP&L) Company is requesting a revision to the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2 Technical Specifications (TS).

The proposed license amendments revise the operability requirements of TS 3.8.5, "DC Sources – Shutdown." This change is consistent with TSTF-204, Revision 3, "Revise DC Sources – Shutdown and Inverters – Shutdown to Address Specific Subsystem Requirements," which was approved by the NRC on February 16, 2000.

Revised Unit 1 Bases pages associated with the proposed amendments are included in Enclosure 9. These pages are provided for information only and do not require issuance by the NRC.

In accordance with 10 CFR 50.91(b), CP&L is providing Mr. Mel Fry of the State of North Carolina a copy of the proposed license amendments.

In order to support the upcoming BSEP Unit No. 2 refueling outage, CP&L requests that the proposed amendments be issued by February 9, 2001.

To allow time for procedure revision and orderly incorporation into copies of the TSs, CP&L requests that the proposed license amendments, once approved by the NRC, be effective within 60 days of issuance of the amendments.

A001

Please refer any questions regarding this submittal to Mr. Warren J. Dorman, Manager - Regulatory Affairs, at (910) 457-2068.

Sincerely,

John S. Keenan

MAT/mat

Enclosures:

1. Basis For Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Typed Technical Specification Page - Unit No. 1
6. Typed Technical Specification Page - Unit No. 2
7. Marked-up Technical Specification Page - Unit No. 1
8. Marked-up Technical Specification Page - Unit No. 2
9. Marked-up Bases Pages - Unit No. 1 (For Information Only)

John S. Keenan, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, and agents of Carolina Power & Light Company.

Kenneth M. Nicely
Notary (Seal)
Kenneth M. Nicely

My commission expires: MAY 18, 2003

cc (with enclosures):

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ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

BASIS FOR CHANGE REQUEST

Proposed Change

The proposed license amendments revise the operability requirements of Technical Specification (TS) 3.8.5, "DC Sources - Shutdown." Specifically, Limiting Condition for Operation (LCO) 3.8.5 is being revised to require one of the unit's DC electrical power subsystems to be operable when the unit is in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. This is consistent with the TS requirements, as they existed prior to conversion to the Improved Technical Specifications (ITS) and TSTF-204, Revision 3, "Revise DC Sources - Shutdown and Inverters - Shutdown to Address Specific Subsystem Requirements," which was approved by the NRC on February 16, 2000.

Current Requirement

LCO 3.8.5 (i.e., Unit 1 is quoted; however, it is typical of both units' TSs) states:

> The following DC electrical power subsystems shall be OPERABLE:
>
> a. The Unit 1 DC electrical power subsystems needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown;" and
>
> b. The Unit 2 DC electrical power subsystem needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown."

Proposed Change

LCO 3.8.5 (i.e., Unit 1 is quoted; however, it is typical of both units' TSs) is being revised to state:

> One Unit 1 DC electrical power subsystem shall be OPERABLE.

Additionally, the wording of Condition A is revised from "One or more required DC electrical power subsystems inoperable" to "One required DC electrical power subsystem inoperable" to be consistent with the revised LCO requirement.

Basis For Proposed Change

Background

On June 5, 1998, the NRC issued amendments 203 and 233 to the facility operating licenses for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2, respectively. These amendments approved conversion to ITS, based on Revision 1 of NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4." In converting to ITS, CP&L adopted, with modification to account for the BSEP DC distribution system design, the operability requirements of TS 3.8.5 for DC sources when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. This was considered a more restrictive change since, prior to conversion, TS 3.8.2.4.2, "D.C. Distribution – Shutdown," stated:

> As a minimum, Division I or Division II of the D.C. power distribution system shall be OPERABLE.

Revision 1 of NUREG-1433 and the current BSEP TSs imply that a full complement of batteries and chargers are required for both divisions of DC power when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment.

TSTF-204, Revision 3, recognizes that the operability requirements for DC sources during shutdown conditions, implied by NUREG-1433, Revision 1, were more restrictive than the current licensing bases for most plants. The approved TSTF provides consistent ITS format and presentation for plants converting to ITS, while retaining current requirements associated with the DC sources. The proposed change revises the operability requirements for the DC sources, during shutdown conditions, to be consistent with the TS requirements, as they existed prior to conversion to ITS, and the guidance of TSTF-204, Revision 3.

Discussion

The DC power sources consist of two independent divisions per unit, designated Division I and Division II. Each division includes a 250 VDC battery, center tapped, to form two 125 VDC batteries. Each 125 VDC battery has an associated full capacity battery charger. The chargers are powered by the same division of the Class 1E distribution system for which the associated DC subsystem supplies the control power. To enhance the availability of Class 1E power, each unit provides DC control power for operation of two of the four 4.16 kV emergency buses and two of the four 480 V emergency buses, as well as control power for two of the four diesel generators. Therefore, loss of any DC electrical power subsystem does not prevent the minimum safety function from being performed.

The operability of the DC electrical power sources during Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment ensures that:

a. The facility can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate DC electrical power is provided to mitigate events postulated during shutdown, such as an inadvertent draindown of the vessel or a fuel handling accident.

As stated in TSTF-204, Revision 3, worst case design basis accidents, which are analyzed for operating modes, are not as significant of a concern during shutdown modes due to lower energy levels. The TSs, therefore, require a lesser complement of electrical equipment to be available during shutdown than is required during operating modes. Specifically, assuming a single failure concurrent with a loss of all offsite or all onsite power is not required. This concept is consistent with the BSEP TSs, prior to conversion to ITS, in that TS 3.8.2.4.2, "D.C. Distribution – Shutdown," required either Division I or Division II of the DC power distribution system to be operable when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. The proposed change returns the operability requirements of LCO 3.8.5 to the pre-ITS licensing bases for the operability requirements of the DC sources when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. In addition, BSEP has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," to maintain shutdown risk at an acceptable low level.

Due to the shared configuration of the 125 VDC system (i.e., each unit provides DC control power for operation of two of the four 4.16 kV emergency buses and two of the four 480 V emergency buses, as well as control power for two of the four diesel generators), LCO 3.8.5 currently includes operability requirements for both units' DC power distribution systems. By returning to the pre-ITS licensing bases for the DC system, it is no longer necessary to maintain DC operability requirements for the operating unit's DC system in the shutdown unit's specifications. The revised LCO 3.8.5 requires one division of the shutdown unit's DC system to be operable.

While the shutdown unit is required to meet TS 3.8.5, an operating unit is governed by TS 3.8.4, "DC - Sources Operating." TS 3.8.4 includes operability requirements for both units' DC systems. Specifically, for a unit in Modes 1, 2, and 3, LCO 3.8.4 (i.e., Unit 1 is quoted; however, it is typical of both units' TSs) states:

The following DC electrical power subsystems shall be OPERABLE:

a. Unit 1 Division I and Division II DC electrical power subsystems; and

b. Unit 2 Division I and Division II DC electrical power subsystems

With one of the required DC electrical power subsystems inoperable, Action A.1 requires the required subsystem to be restored to operable status within 7 days. If this is not accomplished, Action B.1 requires the plant to be placed in Mode 3 within 12 hours. Under such conditions, the operating unit would also enter TS 3.8.7, "Distribution Systems – Operating." With a DC electrical power subsystem, on a shutdown unit, inoperable for maintenance, the operating unit would enter Condition C. The Actions associated with Condition C of TS 3.8.7 require that DC

electrical power distribution subsystems be transferred to their alternate DC source and provide a 7 day allowed out of service time (AOT), consistent with TS 3.8.4. TSs 3.8.4 and 3.8.7 account for the fact that with a DC electrical power distribution subsystem inoperable, the remaining DC subsystems are capable of supporting the minimum safety functions necessary to shutdown the reactor and maintain it in a safe shutdown condition. However, since the overall reliability of the DC system is reduced (i.e., a single failure could result in loss of control power to two of the four 4.16 kV emergency buses and two of the four 480 V emergency buses, or loss of control power for two of the four diesel generators), the TSs impose a 7 day AOT. As such, the proposed TS change does not affect current operability requirements for a unit in Modes 1, 2, and 3.

In summary, the proposed change revises LCO 3.8.5 to require one of the unit's DC electrical power subsystems to be operable when the unit is in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. This is acceptable due to the lower energy levels involved with potential accidents occurring during shutdown modes and because assuming a single failure concurrent with a loss of all offsite or all onsite power during such events is not required. This is consistent with the TS requirements, as they existed prior to conversion to ITS and TSTF-204, Revision 3 which was approved by the NRC on February 16, 2000.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

10 CFR 50.92 EVALUATION

Carolina Power & Light (CP&L) Company has concluded that the proposed change to the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2 Technical Specifications (TS) does not involve a Significant Hazards Consideration. The proposed license amendments revise the operability requirements of TS 3.8.5, "DC Sources - Shutdown." Specifically, Limiting Condition for Operation (LCO) 3.8.5 is being revised to require one of the unit's DC electrical power subsystems to be operable when the unit is in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. This is consistent with the TS requirements, as they existed prior to conversion to the Improved Technical Specifications (ITS) and TSTF-204, Revision 3, "Revise DC Sources - Shutdown and Inverters - Shutdown to Address Specific Subsystem Requirements," which was approved by the NRC on February 16, 2000.

In support of this determination, an evaluation of each of the three (3) standards set forth in 10 CFR 50.92 is provided below.

1. Revising the operability requirements for the DC sources, during shutdown conditions, to require one of the unit's DC electrical power subsystem to be operable when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The operability of the DC electrical power sources during Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment ensures that:

   a. The facility can be maintained in the shutdown or refueling condition for extended periods;

   b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

   c. Adequate DC electrical power is provided to mitigate events postulated during shutdown, such as an inadvertent draindown of the vessel or a fuel handling accident.

   As stated in TSTF-204, Revision 3, worst case design basis accidents which are analyzed for operating modes are not as significant of a concern during shutdown modes due to

lower energy levels. The TSs, therefore, require a lesser complement of electrical equipment to be available during shutdown than is required during operating modes. Specifically, assuming a single failure concurrent with a loss of all offsite or all onsite power is not required. This concept is consistent with the BSEP TSs, prior to conversion to ITS, in that TS 3.8.2.4.2 required either Division I or Division II of the DC power distribution system to be operable when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. The operability requirements of the DC electrical power sources for a unit in Modes 1, 2, and 3 are not affected by the proposed amendments.

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

2. Revising the operability requirements for the DC sources, during shutdown conditions, to require one of the unit's DC electrical power subsystem to be operable when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

   Revising the operability requirements of TS 3.8.5 does not involve physical modification to the plant and does not introduce a new mode of operation. Therefore, there is no possibility of an accident of a new or different type.

3. Revising the operability requirements for the DC sources, during shutdown conditions, to require one of the unit's DC electrical power subsystem to be operable when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment does not involve a significant reduction in a margin of safety.

   The proposed change revises LCO 3.8.5 to require one of the unit's DC electrical power subsystems to be operable when the unit is in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. This is acceptable due to the lower energy levels involved with potential accidents occurring during shutdown modes and because assuming a single failure concurrent with a loss of all offsite or all onsite power during such events is not required. This is consistent with the TS requirements, as they existed prior to conversion to ITS and TSTF-204, Revision 3 which was approved by the NRC on February 16, 2000. The operability requirements of the DC electrical power sources for a unit in Modes 1, 2, and 3 are not affected by the proposed amendments.

   Based on the above, the proposed amendments do not involve a significant reduction in a margin of safety.

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

ENVIRONMENTAL CONSIDERATIONS

Carolina Power & Light (CP&L) Company has concluded that the proposed change to the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2 Technical Specifications (TS) is eligible for categorical exclusion from performing an environmental assessment. The proposed license amendments revise the operability requirements of TS 3.8.5, "DC Sources - Shutdown." Specifically, Limiting Condition for Operation (LCO) 3.8.5 is being revised to require one of the unit's DC electrical power subsystems to be operable when the unit is in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. This is consistent with the TS requirements, as they existed prior to conversion to the Improved Technical Specifications (ITS) and TSTF-204, Revision 3, "Revise DC Sources - Shutdown and Inverters - Shutdown to Address Specific Subsystem Requirements," which was approved by the NRC on February 16, 2000.

In support of this determination, an evaluation of each of the three (3) criteria set forth in 10 CFR 51.22(c)(9) is provided below.

1. As demonstrated in Enclosure 2, revising the operability requirements for the DC sources, during shutdown conditions, to require one of the unit's DC electrical power subsystem to be operable when in Modes 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment does not involve a significant hazards consideration.

2. Revising the operability requirements for the DC sources does not result in a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite. The proposed amendments do not introduce any new equipment nor require any existing equipment or systems to perform a different type of function than they are presently designed to perform. The proposed amendments do not alter the function of existing equipment and will ensure that the consequences of any previously evaluated accident do not increase. Therefore, CP&L has concluded that there will not be a significant increase in the types or amounts of any effluent that may be released offsite and, as such, the proposed amendments do not involve irreversible environmental consequences beyond those already associated with normal operation.

3. Revising the operability requirements for the DC sources does not result in an increase in individual or cumulative occupational radiation exposure. The amendments do not require any occupational activities not currently performed at BSEP. There will be no additional entries into radiation areas nor will there be any increase in normal radiation levels in the plant. As such, the change cannot increase either individual or cumulative radiation exposure.

ENCLOSURE 4

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

PAGE CHANGE INSTRUCTIONS

UNIT NO. 1	
Remove page	Insert page
3.8-27	3.8-27

UNIT NO. 2	
Remove page	Insert page
3.8-27	3.8-27

ENCLOSURE 5

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

TYPED TECHNICAL SPECIFICATION PAGE - UNIT NO. 1

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

LCO 3.8.5 One Unit 1 DC electrical power subsystem shall be OPERABLE.

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required DC electrical power subsystem inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
		(continued)

ENCLOSURE 6

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

TYPED TECHNICAL SPECIFICATION PAGE - UNIT NO. 2

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

LCO 3.8.5 One Unit 2 DC electrical power subsystem shall be OPERABLE.

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required DC electrical power subsystem inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
		(continued)

ENCLOSURE 7

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

MARKED-UP TECHNICAL SPECIFICATION PAGE - UNIT NO. 1

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

Remove

LCO 3.8.5 The following DC electrical power subsystems shall be OPERABLE:

a. The Unit 1 DC electrical power subsystems needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems—Shutdown;" and

b. The Unit 2 DC electrical power subsystem needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems—Shutdown."

One Unit 1 DC electrical power subsystem shall be OPERABLE.

Insert

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ~~or more~~ required DC electrical power subsystem inoperable.	A.1 Declare affected required feature(s) inoperable. OR A.2.1 Suspend CORE ALTERATIONS. AND	Immediately Immediately (continued)

ENCLOSURE 8

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

MARKED-UP TECHNICAL SPECIFICATION PAGE - UNIT NO. 2

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

Remove

LCO 3.8.5 The following DC electrical power subsystems shall be OPERABLE:

a. The Unit 2 DC electrical power subsystems needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems—Shutdown;" and

b. The Unit 1 DC electrical power subsystem needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems—Shutdown."

Insert

One Unit 2 DC electrical power subsystem shall be OPERABLE.

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ~~or more~~ required DC electrical power subsystem inoperable.	A.1 Declare affected required feature(s) inoperable. OR A.2.1 Suspend CORE ALTERATIONS. AND	Immediately Immediately (continued)

ENCLOSURE 9

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENTS
DC SOURCES – SHUTDOWN (LCO 3.8.5)

MARKED-UP BASES PAGES - UNIT NO. 1

(FOR INFORMATION ONLY)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.5 DC Sources—Shutdown

BASES

BACKGROUND

A description of the DC sources is provided in the Bases for LCO 3.8.4, "DC Sources—Operating."

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident and transient analyses in the UFSAR, Chapter 6 (Ref. 1) and Chapter 15 (Ref. 2), assume that Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the diesel generators (DGs), emergency auxiliaries, and control and switching during all MODES of operation and during movement of irradiated fuel assemblies in the secondary containment.

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

The OPERABILITY of the minimum DC electrical power sources during MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment ensures that:

a. The facility can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate DC electrical power is provided to mitigate events postulated during shutdown, such as an inadvertent draindown of the vessel or a fuel handling accident.

Add Insert 1 →

The DC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 3).

LCO

The required Unit 1 DC electrical power subsystem~~s~~ ~~each~~ consisting of two 125 V batteries in series, two battery chargers (one per battery), and the corresponding control equipment and interconnecting cabling supplying power to the associated

(continued)

INSERT 1

In general, when the unit is shutdown, the Technical Specification requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in MODES 1, 2, and 3 have no specific analyses in MODES 4 and 5. Worst case bounding events are deemed not credible in MODES 4 and 5 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case DBAs which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications, therefore, require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications.

BASES

LCO (continued)

bus, needed to support ~~required~~ one DC distribution subsystem ~~required OPERABLE by LCO 3.8.8, "Distribution Systems—Shutdown," are~~ is required to be OPERABLE. ~~In addition, DC control power for operation of two of the four 4.16 kV emergency buses and two of the four 480 V emergency buses, as well as control power for two of the four DGs, is provided by the Unit 2 DC electrical power subsystems. Therefore, the Unit 2 DC electrical power subsystems needed to support required components are also required to be OPERABLE. Unit 2 DC electrical power subsystem OPERABILITY requirements are the same as those required for a Unit 1 DC electrical power subsystem.~~ This requirement ensures the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and inadvertent reactor vessel draindown).

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment provide assurance that:

a. Required features to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core in case of an inadvertent draindown of the reactor vessel;

b. Required features needed to mitigate a fuel handling accident are available;

c. Required features necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

The DC electrical power requirements for MODES 1, 2, and 3 are covered in LCO 3.8.4.

(continued)

BASES (continued)

ACTIONS

LCO 3.0.3 is not applicable while in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, or 3, would require the unit to be shutdown, but would not require immediate suspension of movement of irradiated fuel assemblies. The Note to the ACTIONS, "LCO 3.0.3 is not applicable," ensures that the actions for immediate suspension of irradiated fuel assembly movement are not postponed due to entry into LCO 3.0.3.

A.1, A.2.1, A.2.2, A.2.3, and A.2.4

~~If more than one DC distribution subsystem is required according to LCO 3.8.8, the DC electrical power subsystems remaining OPERABLE with one or more DC electrical power subsystems inoperable may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, fuel movement, and operations with a potential for draining the reactor vessel.~~ By allowance of the option to declare required features inoperable with associated DC electrical power subsystem(s) inoperable, appropriate restrictions are implemented in accordance with the affected system LCOs' ACTIONS. However, in many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies in the secondary containment, and any activities that could result in inadvertent draining of the reactor vessel).

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required DC electrical power subsystems and to continue this action until restoration is accomplished in order to provide the necessary DC electrical power to the plant safety systems.

(continued)