Duke Energy®
Carolinas

JAMES R. MORRIS, VICE PRESIDENT

Duke Energy Carolinas, LLC
Catawba Nuclear Station
4800 Concord Road / CN01VP
York, SC 29745

803-701-4251
803-701-3221 fax

October 8, 2008

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Carolinas, LLC
Catawba Nuclear Station, Units 1 and 2
Docket Numbers 50-413 and 50-414
Proposed Technical Specifications (TS) and Bases Amendment
TS and Bases Administrative changes

Pursuant to 10 CFR 50.90, Duke is requesting amendments to the Catawba Facility Operating Licenses and TS. This request modifies the subject TS and Bases by changing several portions which are out of date, as there are obsolete footnotes and outdated references.

The contents of this amendment request package are as follows:

Attachment 1 provides the technical and regulatory evaluations of the proposed changes. Attachment 2 contains a marked-up version of the affected TS and Bases pages. Reprinted (clean) TS and Bases pages will be provided to the NRC prior to issuance of the approved amendments. This amendment request contains no NRC commitments as discussed in Attachment 3.

Duke requests NRC approval of these proposed changes as soon as reasonably possible.

Duke is requesting a 30-day implementation period in conjunction with these amendments. Implementation of the approved amendments will not require changes to the Catawba Updated Final Safety Analysis Report (UFSAR).

In accordance with Duke administrative procedures and the Quality Assurance Program Topical Report, these proposed amendments have been reviewed and approved by the Catawba

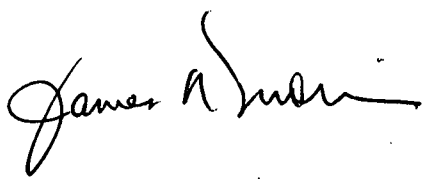
A001
NRR

Plant Operations Review Committee and by the Corporate Nuclear Safety Review Board.

Pursuant to 10 CFR 50.91, a copy of these proposed amendments is being sent to the designated official of the State of South Carolina.

Inquiries on this matter should be directed to M.J. Sawicki at (803) 701-5191.

Very truly yours,



James R. Morris

Attachments

James R. Morris affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

James R. Morris, Vice President

Subscribed and sworn to me: 10/8/08
Date

Notary Public

My commission expires: 7/2/2014
Date

ANTHONY P. JACKSON
NOTARY PUBLIC
MY COMMISSION EXPIRES
JULY 2, 2014
SEAL
STATE OF SOUTH CAROLINA

xc (with attachments):

Luis A. Reyes
U.S. Nuclear Regulatory Commission
Regional Administrator, Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, GA 30303

A.T. Sabisch
Senior Resident Inspector (CNS)
U.S. Nuclear Regulatory Commission
Catawba Nuclear Station

J.F. Stang, Jr. (addressee only)
NRC Senior Project Manager (CNS)
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 8-G9A
11555 Rockville Pike
Rockville, MD 20852-2738

S.E. Jenkins
Section Manager
Division of Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201

bxc (with attachments):

R.D. Hart (CN01RC)
M.J. Sawicki (CN01RC)
R.L. Gill, Jr. (EC05O)
NCMPA-1
NCEMC
PMPA
SREC
Document Control File 801.01
RGC File
ELL-EC05O

ATTACHMENT 1

TECHNICAL AND REGULATORY EVALUATIONS

Subject: Application for License Amendment for Administrative Changes

1. SUMMARY DESCRIPTION

2. DETAILED DESCRIPTION

3. TECHNICAL EVALUATION

4. REGULATORY EVALUATION

5. ENVIRONMENTAL CONSIDERATION

6. REFERENCES

1. SUMMARY DESCRIPTION

This evaluation supports a request to amend Operating Licenses NFP-35 (Catawba Nuclear Station Unit 1) and NFP-52 (Catawba Nuclear Station Unit 2).

Catawba proposes to delete all out-dated, obsolete, and unwarranted data from TS and TS Bases with this license amendment request. Most of these data revisions are due to changes within our organization, or else due to emergency TS changes which have since expired. There are also several pages in both TS and bases which require revision due to the diesel generator battery modification from the nickel cadmium type to the lead acid variety. This change also corrects editorial errors associated with the conversion to Standard TS in two such instances in Appendix B of both the Unit 1 and Unit 2 FOL. The final type of change comes from an inconsistency which was found in TS 5.6.5, which should not make reference to TS 3.9.2 for it is unnecessary.

Duke requests that the NRC approve the proposed amendments based on the improvements to maintaining the TS as current and up-to-date as possible which shall result from the administrative cleanup.

2. DETAILED DESCRIPTION

The following is a description for the identification of each Technical Specification change page, as well as the justification as to why it is to be made.

Facility Operating License, Catawba Unit 1, Appendix B, "Additional Conditions", Amendment #159, which incorrectly cites TS Section 3.4.8.a (should be replaced with TS Section 3.4.16.a) and Figure 3.4-1 (to be replaced with Figure 3.4.16-1).

Facility Operating License, Catawba Unit 2, Appendix B, "Additional Conditions", Amendment #151, which incorrectly cites TS Section 3.4.8.a (should be replaced with TS Section 3.4.16.a) and Figure 3.4-1 (to be replaced with Figure 3.4.16-1).

3.5.2 ECCS- Operating, page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired January 10, 2008.

3.6.6 Containment Spray System, page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired December 31, 2006.

3.6.9 Hydrogen Ignition System (HIS), page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired with Unit 2 entry into Mode 5 following Cycle 11.

3.6.9 Hydrogen Ignition System, page 2 Surveillance Requirements, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired with Unit 2 entry into Mode 5 following Cycle 11.

3.6.17 Containment Valve Injection Water Systems (CVIWS), page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired December 31, 2006.

3.7.5 Auxiliary Feedwater (AFW) System, page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired December 31, 2006.

3.7.7 Component Cooling Water (CCW) System, page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired December 31, 2006.

3.7.10 Control Room Area Ventilation System (CRAVS), page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired December 31, 2006.

3.7.12 Auxiliary Building Filtered Ventilation Exhaust System (ABFVES), page 1, which contains an obsolete emergency Tech Spec Change as a note on the bottom of the page which expired January 10, 2008.

3.8.1 AC Sources-Operating, page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired December 31, 2006.

3.8.1 AC Sources-Operating, page 3, Actions, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired December 31, 2006.

3.8.4 DC Sources-Operating, page 2 Surveillance Requirements, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.4 DC Sources-Operating, page 3 Surveillance Requirements, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 1, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 2 Actions, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 3 Actions(continued), which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 4 Surveillance Requirements, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

5.2 Organization, section 5.2.1 "Onsite and Offsite Organizations", which contains the organizational title change from "Executive Vice President Nuclear Generation Department" to "Chief Nuclear Officer."

5.6 Reporting Requirements, section 5.6.5 "CORE OPERATING LIMITS REPORT (COLR)", which is deleting the error of having Tech Spec 3.9.2 referenced.

Appropriate changes are also being proposed to the TS Bases for this function, consistent with the above proposed TS changes.

Bases

3.6.9 Hydrogen Ignition Systems (HIS), page 1, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired with Unit 2 entry into Mode 5 following Cycle 11.

3.6.9 Hydrogen Ignition Systems (HIS), page 2, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired with Unit 2 entry into Mode 5 following Cycle 11.

3.6.9 Hydrogen Ignition Systems (HIS), page 3, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired with Unit 2 entry into Mode 5 following Cycle 11.

3.6.9 Hydrogen Ignition Systems (HIS), page 4, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired with Unit 2 entry into Mode 5 following Cycle 11.

3.6.9 Hydrogen Ignition Systems (HIS), page 5, which contains an obsolete one-time Tech Spec Change as a note on the bottom of the page which expired with Unit 2 entry into Mode 5 following Cycle 11.

3.8.4 DC Sources-Operating, page 5, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium

Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.4 DC Sources-Operating, page 6, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.4 DC Sources-Operating, page 7, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.4 DC Sources-Operating, page 8, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 1, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 2, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 3, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3.8.6 Battery Cell Parameters, page 4, which contains obsolete information in regard to the Diesel Generator Nickel Cadmium Battery not being used after being replaced with Lead Acid Batteries, as documented in the license amendment request dated July 19, 2004.

3. TECHNICAL EVALUATION

A technical evaluation is unnecessary as this license amendment request only contains administrative changes. Due to the non-technical nature of these changes a review is not required.

4. REGULATORY EVALUATION

Duke has evaluated whether or not a significant hazard consideration is involved with the proposed changes by analyzing the three standards set forth in 10 CFR 50.92(c) as discussed below:

Criterion 1:

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

Response: No.

The proposed changes are administrative in nature and therefore they do not involve any change in the design, configuration, or operation of the nuclear units. All Limiting Conditions for Operation, Limiting Safety System Settings and Safety Limits specified in the Technical Specifications remain unchanged. The Physical Security and related plans, Operator Training and Requalification Programs, Quality Assurance Programs, and the Emergency Plans will not be materially changed by the proposed license amendment due to its administrative nature.

The technical qualifications of the operating licensee will not be reduced. Personnel engaged in operation, maintenance, engineering, assessment, training, and other related services will not be changed. Duke officers and executives currently responsible for the overall safe operation of the nuclear plants are expected to continue in the same capacity.

Therefore, the proposed amendment does not involve an increase in the probability or consequences of an accident previously analyzed.

Criterion 2:

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

Response: No.

The proposed changes are administrative in nature and therefore they do not involve any change in the design, configuration, or operation of the nuclear plant. The current plant safety analyses, therefore, remain complete and accurate in addressing the design basis events and in analyzing plant response and consequences.

The Limiting Conditions for Operations, Limiting Safety System Settings and Safety Limits specified in the Technical Specifications are not affected by the proposed changes. As such, the plant conditions for which the design basis accident analyses were performed remain valid.

The amendment does not introduce a new mode of plant operation or new accident precursors, does not involve any physical alterations to plant configurations or make changes to system set points that could initiate a new or different kind of accident.

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

Criterion 3:

Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed changes are administrative in nature and therefore they do not involve a change in the design, configuration, or operation of the nuclear plants. The change does not affect either the way in which the plant, structures, systems, and components perform their safety function or their design and licensing bases.

Plant safety margins are established through Limiting Conditions for Operation, Limiting Safety System Settings and Safety Limits specified in the Technical Specifications. Because there is no change to the physical design of the plant, there is no change to any of these margins.

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

4.4 Conclusions

Due to the nature of administrative changes, all discussions relating to accidents and safety margins are not applicable in this case. Therefore 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

5. ENVIRONMENTAL CONSIDERATION

The requested conforming license amendment is exempt from environmental review because this action falls within the categorical exclusion contained in 10 CFR 51.22 (c) (2), for which neither an Environmental Assessment nor an Environmental Impact Statement is required. Moreover, the license amendment will not directly affect the actual operation of Catawba Nuclear Station in any substantive way. The proposed administrative change does not involve an increase in the amounts, or a change in the types of any radiological effluents that may be allowed to be released off-site, and it does not involve an increase in the amounts, or change in the types of non-radiological effluents that may be released off-site. Furthermore, there is no increase in the individual or cumulative operational radiation exposure and the proposed transfer has no environmental impact. Accordingly, pursuant to 10 CFR 51.21, 51.32, and 51.35, a finding of no significant environmental impact can be concluded.

6. REFERENCES

1. Catawba Nuclear Station Technical Specifications, Units 1 and 2, through Amendments 243/237.

ATTACHMENT 2

MARKED-UP TS AND BASES PAGES

APPENDIX B

ADDITIONAL CONDITIONS

FACILITY OPERATING LICENSE NO. NPF-35

Duke Power Company LLC shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Condition		Implementation Date
159	This amendment requires the licensee to use administrative controls, as described in the licensee's letter of March 7, 1997, and evaluated in the staff's safety evaluation dated April 29, 1997, to restrict the dose-equivalent iodine levels to 0.46 microCurie per gram (in lieu of the limit in TS Section ~~3.4.8.a)~~, and to 26 microCurie per gram (in lieu of the limit of TS Figure ~~3.4-1)~~, until this license condition is removed by a future amendment.		Immediately upon issuance of the amendment
173	The licensee is authorized to relocate certain requirements included in appendix A to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents as described in the licensee's letters dated May 27, 1997, as amended by letters dated March 9, March 20, April 20, June 3, June 24, July 7, July 21, August 5, September 8, and September 15, 1998, and evaluated in the NRC staff's Safety Evaluation associated with this amendment.		All relocation to be completed by January 31, 1999.

replace with 3.4.16.a

replace with 3.4.16-1

APPENDIX B

ADDITIONAL CONDITIONS

FACILITY OPERATING LICENSE NO. NPF-52

Duke Energy Carolinas, LLC shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Condition		Implementation Date
151	This amendment requires the licensee to use administrative controls, as described in the licensee's letter of March 7, 1997, and evaluated in the staff's safety evaluation dated April 29, 1997, to restrict the dose-equivalent iodine levels to 0.46 microCurie per gram (in lieu of the limit in TS Section ~~3.4.8.a~~), and to 26 microCurie per gram (in lieu of the limit of TS Figure ~~3.4-1~~), until this license condition is removed by a future amendment.		Immediately upon issuance of the amendment.
165	The licensee is authorized to relocate certain requirements included in appendix A to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's letters dated May 27, 1997, as amended by letters dated March 9, March 20, April 20, June 3, June 24, July 7, July 21, August 5, September 8, and September 15, 1998, and evaluated in the NRC staff's Safety Evaluation associated with this amendment.		All relocation to be completed by January 31, 1999.

Replace with 3.4.16.a

Replace with 3.4.16-1

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS — Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE*. Delete

APPLICABILITY: MODES 1, 2, and 3.

---NOTE---
In MODE 3, both safety injection (SI) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more trains inoperable. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	A.1 Restore train(s) to OPERABLE status.	72 hours* Delete
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

Delete

*For Unit 1 only, the Completion Time that the 1B ECCS train can be inoperable as specified by Required Action A.1 may be extended beyond the "72 hours" up to a total of 240 hours as part of the 1B centrifugal charging pump repair. Upon completion of the repair and restoration, this footnote is no longer applicable and will expire at 0130 on January 10, 2008.

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray System

LCO 3.6.6 Two containment spray trains shall be OPERABLE. Delete

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours Delete
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Verify each containment spray 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.	31 days

Delete

(continued)

*For each Unit, the Completion Time that one Containment Spray System train can be inoperable as specified by Required Action A.1 may be extended beyond the 72 hours up to 336 hours as part of the NSWS system upgrades. System upgrades include maintenance activities associated with cleaning of NSWS piping; weld coating, and necessary repairs and/or replacement. Upon completion of the system upgrades and system restoration, this footnote is no longer applicable and if not used, will expire at midnight on December 31, 2006.

3.6 CONTAINMENT SYSTEMS

3.6.9 Hydrogen Ignition System (HIS)

LCO 3.6.9 Two HIS trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One HIS train inoperable. Delete	A.1 Restore HIS train to OPERABLE status. OR A.2 Perform SR 3.6.9.1 on the OPERABLE train.	7 days Once per 7 days
B. One containment region with no OPERABLE hydrogen ignitor* Delete	B.1 Restore one hydrogen ignitor in the affected containment region to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

Delete

* For Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, each train's ignitor located beneath the reactor vessel missile shield may be inoperable without requiring entry into this Condition.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.9.1	Energize each HIS train power supply breaker and verify ≥ 34 (Unit 1) or 33 (Unit 2) ignitors are energized in each train. Delete	92 days
SR 3.6.9.2	Verify at least one hydrogen ignitor is OPERABLE in each containment region. Delete	92 days
SR 3.6.9.3	Energize each hydrogen ignitor and verify temperature is ≥ 1700°F Delete	18 months

Delete

* For Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, this SR is not applicable to each train's ignitor located beneath the reactor vessel missile shield.

3.6 CONTAINMENT SYSTEMS

3.6.17 Containment Valve Injection Water System (CVIWS)

LCO 3.6.17 Two CVIWS trains shall be OPERABLE. Delete

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CVIWS train inoperable.	A.1 Restore CVIWS train to OPERABLE status.	7 days* Delete
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.17.1 Verify system surge tanks pressure is ≥ 36.4 psig.	31 days
SR 3.6.17.2 Verify valve injection flow rate is < 1.29 gpm (Unit 1) < 1.21 gpm (Unit 2) for Train A and < 1.16 gpm for Train B with a surge tank pressure ≥ 36.4 psig.	18 months
SR 3.6.17.3 Verify each automatic valve actuates to its correct position on an actual or simulated actuation signal.	18 months

Delete

*For each Unit, the Completion Time that one CVIWS train can be inoperable as specified by Required Action A.1 may be extended beyond the 168 hours up to 336 hours as part of the NSWS system upgrades. System upgrades include maintenance activities associated with cleaning of NSWS piping; weld coating, and necessary repairs and/or replacement. Upon completion of the system upgrades and system restoration, this footnote is no longer applicable and if not used, will expire at midnight on December 31, 2006.

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 Three AFW trains shall be OPERABLE[*] Delete

---NOTE---
Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

---NOTE---
LCO 3.0.4.b is not applicable when entering MODE 1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to turbine driven AFW pump inoperable.	A.1 Restore steam supply to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
B. One AFW train inoperable in MODE 1, 2 or 3 for reasons other than Condition A.	B.1 Restore AFW train to OPERABLE status.	72 hours[*] AND Delete 10 days[*] from discovery of failure to meet the LCO

Delete (continued)

*For each Unit, the Completion Time that one AFW train can be inoperable as specified by Required Action B.1 may be extended beyond the "72 hours and 10 days from discovery of failure to meet the LCO" up to 336 hours as part of the NSWS system upgrades. System upgrades include maintenance activities associated with cleaning of NSWS piping; weld coating, and necessary repairs and/or replacement. Upon completion of the system upgrades and system restoration, this footnote is no longer applicable and if not used, will expire at midnight on December 31, 2006.

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains shall be OPERABLE*. Delete

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CCW train inoperable.	A.1 ----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops—MODE 4," for residual heat removal loops made inoperable by CCW. ---------- Restore CCW train to OPERABLE status.	72 hours* Delete
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

*For each Unit, the Completion Time that one CCW train can be inoperable as specified by Required Action A.1 may be extended beyond the 72 hours up to 336 hours as part of the NSWS system upgrades. System upgrades include maintenance activities associated with cleaning of NSWS piping; weld coating, and necessary repairs and/or replacement. Upon completion of the system upgrades and system restoration, this footnote is no longer applicable and if not used, will expire at midnight on December 31, 2006.

Delete

3.7 PLANT SYSTEMS

3.7.10 Control Room Area Ventilation System (CRAVS)

LCO 3.7.10 Two CRAVS trains shall be OPERABLE*. Delete

---NOTE---
The control room pressure boundary may be opened intermittently under administrative controls.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRAVS train inoperable in MODES 1,2,3,4,5, and 6.	A.1 Restore CRAVS train to OPERABLE status.	7 days*. Delete
B. Two CRAVS trains inoperable due to inoperable control room pressure boundary in MODES 1, 2, 3, or 4.	B.1 Restore control room pressure boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

Delete

(continued)

*For each CRAVS train, the Completion Time that one CRAVS train can be inoperable as specified by Required Action A.1 may be extended beyond the 168 hours up to 336 hours as part of the NSWS system upgrades. System upgrades include maintenance activities associated with cleaning of NSWS piping; weld coating, and necessary repairs and/or replacement. Upon completion of the system upgrades and system restoration, this footnote is no longer applicable and if not used, will expire at midnight on December 31, 2006.

3.7 PLANT SYSTEMS

3.7.12 Auxiliary Building Filtered Ventilation Exhaust System (ABFVES)

LCO 3.7.12 Two ABFVES trains shall be OPERABLE. Delete

---NOTE---
The ECCS pump rooms pressure boundary may be opened intermittently under administrative controls.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ABFVES train inoperable.	A.1 Restore ABFVES train to OPERABLE status.	7 days
B. Two ABFVES trains inoperable due to inoperable ECCS pump rooms pressure boundary.	B.1 Restore ECCS pump rooms pressure boundary to OPERABLE status.	24 hours* Delete
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours
D. One or more ABFVES train(s) heater inoperable.	D.1 Restore ABFVES train(s) heater to OPERABLE status. OR D.2 Initiate action in accordance with Specification 5.6.6.	7 days 7 days

Delete

* For Unit 1 only, the Completion Time that two ABFVES trains can be inoperable ~~due to inoperable~~ ECCS pump rooms pressure boundary as specified by Required Action B.1 may be extended beyond the "24 hours" up to a total of 240 hours as part of the 1B centrifugal charging pump repair. Upon completion of the repair and restoration, this footnote is no longer applicable and will expire at 0130 on January 10, 2008.

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources—Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE: Delete

a. Two qualified circuits between the offsite transmission network and the Onsite Essential Auxiliary Power System; and

b. Two diesel generators (DGs) capable of supplying the Onsite Essential Auxiliary Power Systems;

AND

The automatic load sequencers for Train A and Train B shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

---NOTE---

LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND	
	A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	AND	

(continued)

Delete

*For each Unit, the Completion Time that one EDG can be inoperable as specified by Required Action B.4 may be extended beyond the "72 hours and 6 days from discovery of failure to meet the LCO" up to 336 hours as part of the NSWS system upgrades. System upgrades include maintenance activities associated with cleaning of NSWS piping; weld coating, and necessary repairs and/or replacement. Upon completion of the system upgrades and system restoration, this footnote is no longer applicable and if not used, will expire at midnight on December 31, 2006.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 Restore DG to OPERABLE status.	72 hours* Delete AND 6 days* from discovery of failure to meet LCO
C. Two offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features
	AND	
	C.2 Restore one offsite circuit to OPERABLE status.	24 hours

(continued)

Delete

*For each Unit, the Completion Time that one EDG can be inoperable as specified by Required Action B.4 may be extended beyond the "72 hours and 6 days from discovery of failure to meet the LCO" up to 336 hours as part of the NSWS system upgrades. System upgrades include maintenance activities associated with cleaning of NSWS piping; weld coating, and necessary repairs and/or replacement. Upon completion of the system upgrades and system restoration, this footnote is no longer applicable and if not used, will expire at midnight on December 31, 2006.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. A and/or D channel of DC electrical power subsystem inoperable. AND Associated train of DG DC electrical power subsystem inoperable.	D.1 Enter applicable Condition(s) and Required Action(s) of LCO 3.8.9, "Distribution Systems-Operating", for the associated train of DC electrical power distribution subsystem made inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify DC channel and DG battery terminal voltage is ≥ 125 V on float charge.	7 days
SR 3.8.4.2	Not used. ~~Verify DG nickel cadmium battery cell voltage ≥ 1.36 V on float charge.~~	~~7 days~~
SR 3.8.4.3	Verify no visible corrosion at the DC channel and DG battery terminals and connectors. OR ~~(For the DC channel and DG batteries utilizing lead acid cells only) Verify~~ battery connection resistance of these items is ≤ 1.5 E-4 ohm.	92 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.4.4	Verify DC channel and DG battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	18 months
SR 3.8.4.5	Remove visible terminal corrosion, verify DC channel and DG battery cell to cell and terminal connections are clean and tight, and are coated with anti-corrosion material.	18 months
SR 3.8.4.6	Verify DC channel and DG lead acid battery connection resistance is $\leq$ 1.5 E-4 ohm.	18 months
SR 3.8.4.7	Verify each DC channel battery charger supplies $\geq$ 200 amps and the DG battery charger supplies $\geq$ 75 amps with each charger at $\geq$ 125 V for $\geq$ 8 hours.	18 months
SR 3.8.4.8	----------NOTES---------- 1. The modified performance discharge test in SR 3.8.4.9 may be performed in lieu of the service test in SR 3.8.4.8. 2. This Surveillance shall not be performed for the DG batteries in MODE 1, 2, 3, or 4. ---------- Verify DC channel and DG battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	18 months

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6

a. Battery cell parameters for the channels of DC batteries shall be within the limits of Table 3.8.6-1;

b. Battery cell parameters for the Diesel Generator (DG) Train A and Train B batteries ~~batteries utilizing lead acid cells~~ shall be within the limits of Table 3.8.6-1; ~~and~~

Delete

~~c. Battery cell parameters for the DG Train A and Train B batteries utilizing nickel cadmium cells shall be within the limits of temperature, level, and voltage.~~ Not Used

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more batteries (channel(s) of DC batteries, DG batteries utilizing lead acid cells or both) with one or more battery cell parameters not within Category A or B limits.	A.1 Verify pilot cells electrolyte level and float voltage meet Table 3.8.6-1 Category C limits. AND A.2 Verify battery cell parameters meet Table 3.8.6-1 Category C limits. AND A.3 Restore battery cell parameters to Category A and B limits of Table 3.8.6-1.	1 hour 24 hours AND Once per 7 days thereafter 31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR One or more batteries (channel(s) of DC batteries, DG batteries, or both) with average electrolyte temperature of the representative cells < 60°F. OR One or more batteries (channel(s) of DC batteries, DG batteries utilizing lead acid cells, or both) with one or more battery cell parameters not within Category C values.	B.1 Declare associated battery inoperable. AND B.2 ----------NOTE---------- Only applicable for inoperable DG batteries. ---------- Enter applicable Condition(s) and Required Action(s) of LCO 3.8.1, "AC Sources – Operating", or LCO 3.8.2, "AC Sources – Shutdown" for the associated DG made inoperable.	Immediately Immediately
C. One or more DG batteries utilizing nickel cadmium cells with electrolyte level not at or above the low mark and not at or below the high mark. OR One or more DG batteries utilizing nickel cadmium cells with two or more connected cells < 1.36 V.	C.1 Enter applicable Condition(s) and Required Action(s) of LCO 3.8.1, "AC Sources - Operating", or LCO 3.8.2, "AC Sources - Shutdown" for the associated DG made inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.6.1	Verify battery cell parameters of the channels of DC and DG batteries utilizing lead acid cells meet Table 3.8.6-1 Category A limits.	7 days
SR 3.8.6.2	Verify electrolyte level of DG batteries utilizing nickel cadmium cells is at or above low mark and at or below high mark.	7 days
SR 3.8.6.3	Verify battery cell parameters of the channels of DC and DG batteries utilizing lead acid cells meet Table 3.8.6-1 Category B limits.	92 days AND Once within 7 days after a battery discharge < 110 V AND Once within 7 days after a battery overcharge > 150 V
SR 3.8.6.4	Verify average electrolyte temperature for the channels of DC and DG batteries of representative cells is $\geq$ 60°F.	92 days

Not used.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the UFSAR;

b. The Station Manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

c. The Vice President of Catawba Nuclear Site shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety;

d. The ~~Executive Vice President Nuclear Generation Department~~ Chief Nuclear Officer will be the Senior Nuclear Executive and have corporate responsibility for overall nuclear safety; and (Delete)

e. The individuals who train the operating staff, carry out radiation protection, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator shall be assigned for each control room from which a reactor is operating in MODES 1, 2, 3, or 4.

A total of three non-licensed operators are required for the two units.

(continued)

5.6 Reporting Requirements (continued)

5.6.4 Not used.

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. Illustration of Reactor Core Safety Limits for Specification 2.1.1,
2. Moderator Temperature Coefficient BOL and EOL limits and 60 ppm and 300 ppm surveillance limits for Specification 3.1.3,
3. Shutdown Bank Insertion Limit for Specification 3.1.5,
4. Control Bank Insertion Limits for Specification 3.1.6,
5. Axial Flux Difference limits for Specification 3.2.3,
6. Heat Flux Hot Channel Factor for Specification 3.2.1,
7. Nuclear Enthalpy Rise Hot Channel Factor for Specification 3.2.2,
8. Overtemperature and Overpower Delta T setpoint parameter values for Specification 3.3.1,
9. Reactor Coolant System Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits for Specification 3.4.1,
10. Accumulator and Refueling Water Storage Tank boron concentration limits for Specification 3.5.1 and 3.5.4,
11. Reactor Coolant System and refueling canal boron concentration limits for Specification 3.9.1,
12. Spent fuel pool boron concentration limits for Specification 3.7.15,
13. SHUTDOWN MARGIN for Specification 3.1.1,
14. 31 EFPD Surveillance Penalty Factors for Specifications 3.2.1 and 3.2.2, and
15. Reactor Makeup Water Pumps Combined Flow Rates limit for Specifications 3.3.9 and 3.9.2.

delete

(continued)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.9 Hydrogen Ignition System (HIS)

BASES

BACKGROUND

The HIS reduces the potential for breach of primary containment due to a hydrogen oxygen reaction in post accident environments. The HIS is required by 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light-Water-Cooled Reactors" (Ref. 1), and Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 2), to reduce the hydrogen concentration in the primary containment following a degraded core accident. The HIS must be capable of handling an amount of hydrogen equivalent to that generated from a metal water reaction involving 75% of the fuel cladding surrounding the active fuel region (excluding the plenum volume).

10 CFR 50.44 (Ref. 1) requires units with ice condenser containments to install suitable hydrogen control systems that would accommodate an amount of hydrogen equivalent to that generated from the reaction of 75% of the fuel cladding with water. The HIS provides this required capability. This requirement was placed on ice condenser units because of their small containment volume and low design pressure (compared with pressurized water reactor dry containments). Calculations indicate that if hydrogen equivalent to that generated from the reaction of 75% of the fuel cladding with water were to collect in the primary containment, the resulting hydrogen concentration would be far above the lower flammability limit such that, if ignited from a random ignition source, the resulting hydrogen burn would seriously challenge the containment and safety systems in the containment.

The HIS is based on the concept of controlled ignition using thermal ignitors, designed to be capable of functioning in a post accident environment, seismically supported, and capable of actuation from the control room. A total of 70* ignitors are distributed throughout the various regions of containment in which hydrogen could be released or to which it could flow in significant quantities. The ignitors are arranged in two independent trains such that each containment region has at least two ignitors*, one from each train, controlled and powered redundantly so that ignition would occur in each region even if one train failed to energize.

Delete

Delete

* During Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, each train's ignitor located beneath the reactor vessel missile shield may be inoperable without impacting the OPERABILITY of its respective train.

BASES

BACKGROUND (continued)

When the HIS is initiated, the ignitor elements are energized and heat up to a surface temperature ≥ 1700°F*. At this temperature, they ignite the hydrogen gas that is present in the airspace in the vicinity of the ignitor. The HIS depends on the dispersed location of the ignitors so that local pockets of hydrogen at increased concentrations would burn before reaching a hydrogen concentration significantly higher than the lower flammability limit. Hydrogen ignition in the vicinity of the ignitors is assumed to occur when the local hydrogen concentration reaches 8.5 volume percent (v/o) and results in 100% of the hydrogen present being consumed.

APPLICABLE SAFETY ANALYSES

The HIS causes hydrogen in containment to burn in a controlled manner as it accumulates following a degraded core accident (Ref. 3). Burning occurs at the lower flammability concentration, where the resulting temperatures and pressures are relatively benign. Without the system, hydrogen could build up to higher concentrations that could result in a violent reaction if ignited by a random ignition source after such a buildup.

The hydrogen ignitors are not included for mitigation of a Design Basis Accident (DBA) because an amount of hydrogen equivalent to that generated from the reaction of 75% of the fuel cladding with water is far in excess of the hydrogen calculated for the limiting DBA loss of coolant accident (LOCA). The hydrogen ignitors have been shown by probabilistic risk analysis to be a significant contributor to limiting the severity of accident sequences that are commonly found to dominate risk for units with ice condenser containments. As such, the hydrogen ignitors satisfy Criterion 4 of 10 CFR 50.36 (Ref. 4).

LCO

Two HIS trains must be OPERABLE with power from two independent, safety related power supplies.

For this unit, an OPERABLE HIS train consists of 34 (Unit 1) or 33* (Unit 2) of 35 ignitors energized on the train.

* During Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, each train's ignitor located beneath the reactor vessel missile shield may be inoperable without impacting the OPERABILITY of its respective train.

BASES

LCO (continued)

Operation with at least one HIS train ensures that the hydrogen in containment can be burned in a controlled manner. Unavailability of both HIS trains could lead to hydrogen buildup to higher concentrations, which could result in a violent reaction if ignited. The reaction could take place fast enough to lead to high temperatures and overpressurization of containment and, as a result, breach containment or cause containment leakage rates above those assumed in the safety analyses. Damage to safety related equipment located in containment could also occur.

APPLICABILITY

Requiring OPERABILITY in MODES 1 and 2 for the HIS ensures its immediate availability after safety injection and scram actuated on a LOCA initiation. In the post accident environment, the two HIS subsystems are required to control the hydrogen concentration within containment to near its flammability limit of 4.0 v/o assuming a worst case single failure. This prevents overpressurization of containment and damage to safety related equipment and instruments located within containment.

In MODES 3 and 4, both the hydrogen production rate and the total hydrogen production after a LOCA would be significantly less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the HIS is low. Therefore, the HIS is not required in MODES 3 and 4.

In MODES 5 and 6, the probability and consequences of a LOCA are reduced due to the pressure and temperature limitations of these MODES. Therefore, the HIS is not required to be OPERABLE in MODES 5 and 6.

ACTIONS

A.1 and A.2 OR Delete

With one HIS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days or the OPERABLE train must be verified OPERABLE frequently by performance of SR 3.6.9.1. The 7 day Completion Time is based on the low probability of the occurrence of a degraded core event that would generate hydrogen in amounts equivalent to a metal water reaction of 75% of the core cladding, the

Delete

* For Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, each train's ignitor located beneath the reactor vessel missile shield may be inoperable without requiring entry into this Condition.

BASES

ACTIONS (continued)

length of time after the event that operator action would be required to prevent hydrogen accumulation from exceeding this limit, and the low probability of failure of the OPERABLE HIS train. Alternative Required Action A.2, by frequent surveillances, provides assurance that the OPERABLE train continues to be OPERABLE.

B.1* Delete

Condition B is one containment region with no OPERABLE hydrogen ignitor. Thus, while in Condition B, or in Conditions A and B simultaneously, there would always be ignition capability in the adjacent containment regions that would provide redundant capability by flame propagation to the region with no OPERABLE ignitors.

Required Action B.1 calls for the restoration of one hydrogen ignitor in each region to OPERABLE status within 7 days. The 7 day Completion Time is based on the same reasons given under Required Action A.1.

C.1

The unit must be placed in a MODE in which the LCO does not apply if the HIS subsystem(s) cannot be restored to OPERABLE status within the associated Completion Time. This is done by placing the unit in at least MODE 3 within 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.9.1

Delete

This SR confirms that ≥ 34 (Unit 1) or 33** (Unit 2) of 35 hydrogen ignitors can be successfully energized in each train. The ignitors are simple resistance elements. Therefore, energizing provides assurance of

Delete

* For Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, each train's ignitor located beneath the reactor vessel missile shield may be inoperable without requiring entry into this Condition.

** For Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, this SR is not applicable to each train's ignitor located beneath the reactor vessel missile shield.

BASES

SURVEILLANCE REQUIREMENTS (continued)

OPERABILITY. The allowance of one inoperable hydrogen ignitor is acceptable because, although one inoperable hydrogen ignitor in a region would compromise redundancy in that region, the containment regions are interconnected so that ignition in one region would cause burning to progress to the others (i.e., there is overlap in each hydrogen ignitor's effectiveness between regions). The Frequency of 92 days has been shown to be acceptable through operating experience.

SR 3.6.9.2

This SR confirms that the two inoperable hydrogen ignitors allowed by SR 3.6.9.1 (i.e., one in each train) are not in the same containment region*. The Frequency of 92 days is acceptable based on the Frequency of SR 3.6.9.1, which provides the information for performing this SR.

Delete

SR 3.6.9.3

A more detailed functional test is performed every 18 months to verify system OPERABILITY. Each ignitor is visually examined to ensure that it is clean and that the electrical circuitry is energized. All ignitors, including normally inaccessible ignitors, are visually checked for a glow to verify that they are energized. Additionally, the surface temperature of each ignitor is measured to be ≥ 1700°F to demonstrate that a temperature sufficient for ignition is achieved*. The 1700°F temperature is a surveillance requirement. "An Analysis of Hydrogen Control Measures at McGuire Nuclear Station" (Ref. 5) section 3.8 identifies that the required normal operation temperature is 1500°F. Therefore, based upon ignitor performance testing conducted at Catawba, the surveillance requirement of 1700°F ensures that sufficient margin is present for continued hydrogen ignition under degraded bus conditions. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Delete

Delete

* For Unit 2 Cycle 11 operation only, or until the next Unit 2 entry into MODE 5 which allows affected ignitor replacement, this SR is not applicable to each train's ignitor located beneath the reactor vessel missile shield.

BASES

ACTIONS (continued)

the loss of the channel DC power and the associated DG DC power, the load center power for the train is inoperable and the Condition(s) and Required Action(s) for the Distribution Systems must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the charging system and the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery (or battery cell) and maintain the battery (or a battery cell) in a fully charged state. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The 7 day Frequency is consistent with manufacturer recommendations and IEEE-450 (Ref. 9).

SR 3.8.4.2

Not used.

Verifying battery individual cell voltage while on float charge for the DG batteries utilizing nickel cadmium cells ensures each cell is capable of supporting their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery (or battery cell) and maintain the battery (or a battery cell) in a fully charged state. The battery cell voltage limit of $\geq$ 1.36 V is consistent with the nominal design voltage of the battery and is based on the manufacturer's recommended minimum float charge voltage for a fully charged cell with adequate capacity. The battery is designed and sized with a capacity margin sufficient to allow up to one cell to be fully degraded with a voltage < 1.36 V assuming that no cells are jumpered out. The battery sizing calculations account for a degraded cell by assuming the degraded cell undergoes a worst-case polarity reversal during a design discharge. For this surveillance, a minimum of two cells shall be tested every seven days. The cells selected for testing shall be rotated on a monthly basis. The 7 day Frequency is consistent with the manufacturer's recommendations.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.3

For the DC channel and DG batteries utilizing lead acid cells, visual inspection to detect corrosion of the battery terminals and connections, or measurement of the resistance of each intercell, interrack, intertier, and terminal connection, provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. The presence of visible corrosion does not necessarily represent a failure of this SR, provided an evaluation determines that the visible corrosion does not affect the OPERABILITY of the battery.

For the DG batteries utilizing nickel cadmium cells, visual inspection to detect corrosion of the battery terminals and connections provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. The presence of visible corrosion does not necessarily represent a failure of this SR, provided an evaluation determines that the visible corrosion does not affect the OPERABILITY of the battery.

The Surveillance Frequency for these inspections, which can detect conditions that can cause power losses due to resistance heating, is 92 days. This Frequency is considered acceptable based on operating experience related to detecting corrosion trends.

SR 3.8.4.4

and DG

For the DC channel batteries, visual inspection of the battery cells, cell plates, and battery racks provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. The presence of physical damage or deterioration does not necessarily represent a failure of this SR, provided an evaluation determines that the physical damage or deterioration does not affect the OPERABILITY of the battery (its ability to perform its design function).

For the DG batteries, visual inspection of the battery cells, cell plates, and battery racks provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. Since the DG nickel cadmium battery cell jars are not transparent, a direct visual inspection of the cell plates cannot be performed. Instead, the cell plates are inspected for physical damage and abnormal deterioration by: 1) visually inspecting the jar sides of each cell for excessive bowing and/or deformation, and 2) visually inspecting the electrolyte of each cell for abnormal appearance.

SURVEILLANCE REQUIREMENTS (continued)

Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.8.4.5 and SR 3.8.4.6

Visual inspection and resistance measurements of intercell, interrack, intertier, and terminal connections provide an indication of physical damage or abnormal deterioration that could indicate degraded battery condition. The anticorrosion material, as recommended by the manufacturer for the batteries, is used to help ensure good electrical connections and to reduce terminal deterioration. The visual inspection for corrosion is not intended to require removal of and inspection under each terminal connection. The removal of visible corrosion is a preventive maintenance SR. The presence of visible corrosion does not necessarily represent a failure of this SR provided visible corrosion is removed during performance of SR 3.8.4.5.

For the DG batteries utilizing nickel cadmium cells, the cell-to-cell terminal pole screws should be set from 14 to 15 foot-pounds of torque. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.8.4.7

This SR requires that each battery charger for the DC channel be capable of supplying at least 200 amps and at least 75 amps for the DG chargers. All chargers shall be tested at a voltage of at least 125 V for $\geq$ 8 hours. These requirements are based on the design capacity of the chargers (Ref. 4). According to Regulatory Guide 1.32 (Ref. 10), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied.

The Surveillance Frequency is acceptable, given the unit conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these 18 month intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.8

A battery service test is a special test of battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The vital battery's actual duty cycle is identified in calculation CNC-1381.05-00-0011, 125 VDC Vital Instrumentation and Control Power System Battery and Battery Charger Sizing Calculation. The test duty cycle is the actual duty cycle adjusted for the temperature correction factor for 60°F operation, and a design margin of typically 10 to 15% for load addition. The DC channel batteries are tested to supply a current $\geq$ 534.11 amps for the first minute, then $\geq$ 279.23 amps for the next 9 minutes, $\geq$ 387.66 amps for the next 10 minutes, and $\geq$ 293.49 amps for the next 100 minutes. Terminal voltage is required to remain $\geq$ 110.4 volts during this test. The DG battery's actual duty cycle is identified in calculation CNC-1381.05-00-0050, 125 VDC Diesel Generator Battery and Battery Charger Sizing Calculation. The test duty cycle is the actual duty cycle adjusted for the temperature correction factor for 60°F operation, and a design margin of typically 10 to 15% for load addition. The DG batteries utilizing nickel cadmium cells are tested to supply a current $\geq$ 218.5 amps for the first minute, then $\geq$ 42.5 amps for the next 10 minutes, then $\geq$ 121.8 amps for the next minute, then $\geq$ 42.5 amps for the remaining 108 minutes. Terminal voltage is required to remain $\geq$ 105 volts during this test. The DG batteries utilizing lead acid cells are tested to supply a current $\geq$ 228.0 amps for the first minute, then $\geq$ 37.75 amps for the next 10 minutes, then $\geq$ 127.1 amps for the next minute, then $\geq$ 37.75 amps for the remaining 108 minutes. Terminal voltage is required to remain $\geq$ 105 volts during this test. (Note: The duty cycle in the UFSAR is used for battery sizing and includes the temperature factor of 11%, a design margin of 15%, and an aging factor of 25%.)

Except for performing SR 3.8.4.8 for the DC channel batteries with the unit on line, the Surveillance Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 10), which states that the battery service test should be performed during refueling operations or at some other outage, with intervals between tests, not to exceed 18 months.

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Cell Parameters

BASES

BACKGROUND

This LCO delineates the limits on electrolyte temperature, level, float voltage, and specific gravity for the channels of DC power source batteries. The LCO also addresses the trains of DC for the Diesel Generator battery limits for both lead acid and nickel cadmium cells. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for LCO 3.8.4, "DC Sources—Operating," and LCO 3.8.5, "DC Sources—Shutdown."

APPLICABLE SAFETY ANALYSES

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

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one train of DC sources OPERABLE during accident conditions, in the event of:

a. An assumed loss of all offsite AC power or all onsite AC power; and

b. A worst case single failure.

Battery cell parameters satisfy Criterion 3 of 10 CFR 50.36 (Ref. 3).

LCO

Battery cell parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. Electrolyte limits are conservatively established, allowing continued DC electrical system function even with Category A and B limits not met.

BASES

APPLICABILITY

The battery cell parameters are required solely for the support of the associated DC electrical power subsystems. Therefore, battery electrolyte is only required when the DC power source is required to be OPERABLE. Refer to the Applicability discussion in Bases for LCO 3.8.4 and LCO 3.8.5.

ACTIONS

A.1, A.2, and A.3

With one or more cells in one or more batteries (DC batteries, DG batteries utilizing lead acid cells, or both) not within limits (i.e., Category A limits not met, Category B limits not met, or Category A and B limits not met) but within the Category C limits specified in Table 3.8.6-1 in the accompanying LCO, the battery is degraded but there is still sufficient capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of Category A or B limits not met and operation is permitted for a limited period.

The pilot cell electrolyte level and float voltage are required to be verified to meet the Category C limits within 1 hour (Required Action A.1). This check will provide a quick indication of the status of the remainder of the battery cells. One hour provides time to inspect the electrolyte level and to confirm the float voltage of the pilot cells. One hour is considered a reasonable amount of time to perform the required verification.

Verification that the Category C limits are met (Required Action A.2) provides assurance that during the time needed to restore the parameters to the Category A and B limits, the battery is still capable of performing its intended function. A period of 24 hours is allowed to complete the initial verification because specific gravity measurements must be obtained for each connected cell. Taking into consideration both the time required to perform the required verification and the assurance that the battery cell parameters are not severely degraded, this time is considered reasonable. The verification is repeated at 7 day intervals until the parameters are restored to Category A or B limits. This periodic verification is consistent with the normal Frequency of pilot cell Surveillances.

Continued operation is only permitted for 31 days before battery cell parameters must be restored to within Category A and B limits. With the consideration that, while battery capacity is degraded, sufficient capacity exists to perform the intended function and to allow time to fully restore the battery cell parameters to normal limits, this time is acceptable prior to declaring the battery inoperable.

BASES

ACTIONS (continued)

B.1 and B.2

With one or more batteries (DC batteries, DG batteries utilizing lead acid cells) or both) with one or more battery cell parameters outside the Category C limit for any connected cell, sufficient capacity to supply the maximum expected load requirement is not assured and the corresponding DC electrical power subsystem must be declared inoperable. Additionally, other potentially extreme conditions, such as not completing the Required Actions of Condition A within the required Completion Time or average electrolyte temperature of representative cells (applicable to DC batteries and both types of DG batteries) falling below 60°F, are also cause for immediately declaring the associated DC electrical power subsystem inoperable per Required Action B.1.

In addition, Required Action B.2 mandates that the appropriate LCO(s) must then be entered for the DG supported by the inoperable DC subsystem. If the plant is in MODES 1 through 4, LCO 3.8.1, "AC Sources – Operating" is required to be entered. If the DG is required to support equipment during MODES 5 or 6 or movement of irradiated fuel assemblies, regardless of operating mode, LCO 3.8.2, "AC Sources – Shutdown," is the appropriate LCO.

Required Action B.2 is modified by a Note indicating that it is only applicable for inoperable DG batteries.

C.1

With one or more DG batteries utilizing nickel cadmium cells with one or more battery cell(s) not within the limits of level, sufficient capacity to supply the required load for the DG is not assumed and the corresponding DC electrical power subsystem must be declared inoperable immediately. With one or more DG batteries utilizing nickel cadmium cells with two or more battery cells not within limits of voltage, sufficient capacity to supply the required load for the DG is not assumed and the corresponding DC electrical power subsystem must be declared inoperable immediately. Appropriate LCO(s) must then be entered for the DG supported by the inoperable DC subsystem. If the plant is in MODES 1 through 4, LCO 3.8.1, "AC Sources—Operating" is required to be entered.

If the DG is required to support equipment during MODES 5 or 6 or movement of irradiated fuel assemblies, regardless of operating mode, LCO 3.8.2, "AC Sources—Shutdown" is the appropriate LCO.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.6.1

This SR verifies that Category A battery cell parameters are consistent with IEEE-450 (Ref. 4), which recommends regular battery inspections (at least one per month) including voltage, specific gravity, and electrolyte temperature of pilot cells. This SR is applicable to both DC batteries and DG batteries utilizing lead acid cells.

SR 3.8.6.2

Not used.

This SR verifies the DG nickel cadmium battery cell parameter of level via regular battery inspection (at least once every 7 days). The electrolyte level is monitored in order to maintain battery performance and effectiveness. The 7 day Frequency has been shown acceptable through operating experience.

SR 3.8.6.3

The quarterly inspection of the channels of DC and DG batteries utilizing lead acid cells for specific gravity and voltage is consistent with IEEE-450 (Ref. 4). In addition, within 24 hours of a battery discharge < 110 V or a battery overcharge > 150 V, the battery must be demonstrated to meet Category B limits. Transients, such as motor starting transients, which may momentarily cause battery voltage to drop to ≤ 110 V, do not constitute a battery discharge provided the battery terminal voltage and float current return to pre-transient values. This inspection is also consistent with IEEE-450 (Ref. 4), which recommends special inspections following a severe discharge or overcharge, to ensure that no significant degradation of the battery occurs as a consequence of such discharge or overcharge.

SR 3.8.6.4

This Surveillance verification that the average temperature of representative cells is ≥ 60°F, is consistent with a recommendation of IEEE-450 (Ref. 4), that states that the temperature of electrolytes in representative cells should be determined on a quarterly basis.

Lower than normal temperatures act to inhibit or reduce battery capacity. This SR ensures that the operating temperatures remain within an acceptable operating range. This limit is based on manufacturer recommendations.

ATTACHMENT 3

NRC COMMITMENTS

There are no regulatory commitments being made with this license amendment request.