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December 6, 2001

U. S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Nos. 50-269, 270, and 287
License Amendment Request for Technical Specification 3.7.16, "Control Room Area Cooling System (CRACS)"
Technical Specification Change Number 2001-04

Pursuant to Title 10, Code of Federal Regulations, Part 50, Section 90 (10 CFR 50.90), Duke Energy Corporation proposes to amend Appendix A, Technical Specifications, for Facility Operating Licenses DPR-38, DPR-47 and DPR-55 for Oconee Nuclear Station Units 1, 2, and 3. Technical Specification (TS) 3.7.16, "Control Room Area Cooling System (CRACS)" currently requires entry into TS 3.0.3 whenever two trains of CRACS are inoperable. This change would allow six (6) hours to restore operability of one train.

This change is in alignment with Initiative 6 of the NEI Risk Informed Improved Tech Spec Task Force. Initiative 6 addresses the issue that TS 3.0.3 requirements to immediately shutdown the affected unit(s) may not be the least risk alternative. One aspect of Initiative 6 is to generate condition specific action statements rather than default to TS 3.0.3.

This change provides an allowed completion time for this condition that is similar to approved TS provisions at two other sites. These provisions are referenced in the body of the request.

The description and analysis of the proposed change is included as Attachment 1. This includes the Technical Justification, the No Significant Hazards Consideration Evaluation, and the Environmental Impact Analysis. Attachment 2 contains the markup of the current Technical Specification

A001

and Bases pages. The revised Technical Specification and Bases pages are included in Attachment 3.

This proposed change to the TS has been reviewed and approved by the Plant Operations Review Committee and Nuclear Safety Review Board.

Implementation of these changes will not result in an undue risk to the health and safety of the public.

The Oconee Updated Final Safety Analysis Report has been reviewed and no changes are necessary to support this LAR.

Pursuant to 10 CFR 50.91, a copy of this proposed amendment is being sent to the South Carolina Department of Health and Environmental Control for review, and as deemed necessary and appropriate, subsequent consultation with the NRC staff.

If there are any additional questions, please contact Randall Todd at (864) 885-3418.

Very Truly Yours,

W. R. McCollum, Jr., Vice President
Oconee Nuclear Station

Attachments

xc: Mr. L. N. Olshan, Project Manager
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Mr. L. A. Reyes, Regional Administrator
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W. R. McCollum, Jr., being duly sworn, states that he is Vice President, Oconee Nuclear Site, Duke Energy Corporation, that he is authorized on the part of said Corporation to sign and file with the U. S. Nuclear Regulatory Commission this revision to the Facility Operating License Nos. DPR-38, DPR-47, DPR-55; and that all statements and matters set forth therein are true and correct to the best of his knowledge.

W. R. McCollum, Jr., Vice President
Oconee Nuclear Site

Subscribed and sworn to before me this 6th day of December 2001.

Conice M. Dreazale
Notary Public

My Commission Expires:

2/12/2003

ATTACHMENT 1

DESCRIPTION, AND SAFETY AND REGULATORY ANALYSIS OF PROPOSED CHANGE NUMBER TS 2001-04

ATTACHMENT 1
DESCRIPTION, AND SAFETY AND REGULATORY ANALYSIS OF PROPOSED CHANGE NUMBER TS 2001-04

1.0 INTRODUCTION

1.1 Proposed Change Number TS 2001-04 is a request to revise Technical Specification (TS) 3.7.16, "Control Room Area Cooling System (CRACS)" for Oconee Nuclear Station (ONS), Units 1, 2, and 3. TS 3.7.16 establishes limiting conditions and required actions for the Control Room Ventilation System (CRVS) and the Chilled Water System (WC) that are CRACS sub-systems.

1.2 EXISTING TECHNICAL SPECIFICATIONS AND BASES (Mark-up)

See Attachment 2

1.3 PROPOSED TECHNICAL SPECIFICATIONS AND BASES

See Attachment 3

1.4 UPDATED FINAL SAFETY ANALYSIS REPORT (UFSAR) SAFETY ANALYSIS

No changes to the ONS UFSAR are anticipated as a result to this LAR.

2.0 DESCRIPTION OF CHANGE

The proposed changes are:

1. TS changes

a) The proposed change to TS 3.7.16 will delete reference to TS 3.0.3 from the required actions when no CRVS or WC trains are OPERABLE on a Unit (current Condition E). Instead, actions and time limits would be specified within TS 3.7.16.

b) The proposed change would resequence and reword current Condition E to become Condition D and to allow six (6) hours to restore operability of one train. If this new Condition D completion time cannot be met, then a condition (existing Condition D, resequenced to become Condition E) would require the affected Unit(s) to be in MODE 3 within 12 hours and MODE 5 within 36 hours.

c) The proposed change would also reword Conditions B and D (revised) to refer to "required WC trains" being inoperable.

2. UFSAR / Design Basis Changes

There are no UFSAR or Design Basis Changes associated with this LAR.

3. Other

Technical Specification Bases 3.7.16 are revised to reflect the TS changes described above and to include an additional editorial change to one paragraph for clarity.

3.0 BACKGROUND

The CRACS provides temperature control for the control areas, defined as the control room, cable room, and equipment room for each unit. CRACS is composed of two subsystems: the Control Room Ventilation System (CRVS) and the Chilled Water System (WC). Units 1 and 2 have a shared control room and ventilation system. The Unit 1 and 2 cable and equipment rooms are divided by unit, but will share ventilation in the event of a single failure. Unit 3 has an independent control room, cable room, and equipment room. The Unit 3 CRVS is also independent of the Unit 1&2 system. The WC system is shared among all three units.

Transient temperature calculations show that temperatures in the control room area remain below equipment limits for at least 18 hours following a total loss of cooling. Therefore, there are no plant safety concerns with a loss of cooling of up to 18 hours.

Improved Technical Specifications were implemented on March 27, 1999. TS 3.7.16 was added to TS at that time. Condition E of TS 3.7.16 requires that LCO 3.0.3 be entered immediately if both CRACS trains are inoperable. This condition has been entered four times since the implementation of ITS. As a result, ONS has identified a number of actions to improve the reliability of the CRACS components. Many of these actions are complete and several are still in progress. However, ONS has also noted the impact on station operation due to entry into TS 3.0.3 for these events. In each case the event involved loss of WC and applied

to all three units. The longest time that the station was in TS 3.0.3 during these events was approximately 5 hours and 12 minutes. That event resulted in a simultaneous reduction of reactor power on all three nuclear units. During the other three events, at least one train of cooling was restored within 2 hours. At no time during any of these events did control area temperatures approach equipment temperature limits. Considering these experiences and transient temperature calculations, ONS has concluded that such events have low safety significance and do not warrant such immediate action to place all three ONS units in a shutdown transient. This proposed TS change is being requested in order to provide a more reasonable time to restore control room cooling and to eliminate unnecessary changes in reactor power level.

The Post-Accident Control Room filtration and dose control function is provided by the Control Room Booster Fans and filters governed by TS 3.7.9. Therefore this proposed TS change has no impact on operator exposure to radiation or chemical releases following postulated accidents.

4.0 TECHNICAL ANALYSES

4.1 TS Changes

a) TS 3.7.16, Condition E, currently requires entry into TS 3.0.3 if two CRVS or two WC trains are inoperable. TS 3.0.3 then requires action be initiated within one hour to bring the affected Unit(s) to MODE 3 within 12 hours, to MODE 4 within 18 hours, and to MODE 5 within 37 hours. The proposed change to TS 3.7.16 deletes reference to TS 3.0.3 from the required actions when no CRVS or WC trains are OPERABLE on a Unit. Instead, the proposed revision would allow six hours to restore operability of one train. If this completion time cannot be met, then a condition would require the affected Unit(s) to be in MODE 3 within 12 hours and MODE 5 within 36 hours from entry into that condition. The proposed time limits are reasonable with respect to the function of the system compared to the potential impact of shutting down multiple units for an event of little safety significance.

There is little safety significance associated with the six hour Completion Time because CRACS does not perform any immediate actions post-accident. The rooms

in the Control Room Area are normally maintained below the TS temperature limits (80F for Control and Cable Rooms and 85F for Equipment Room) and considerably below equipment design temperatures (120F or greater). The thermal mass of the structures involved is large; therefore it takes many hours for temperatures to increase to equipment temperature limits following any event or accident which includes a total loss of cooling. Transient temperature calculations show that after 18 hours of a total loss of cooling, temperatures in the control room area remain below equipment design temperatures. The system does not have any automatic actuation signals. The design bases for the system credit manual operator actions to restore the system following any event involving a loss of offsite power.

TS 3.0.3 requires prompt action to shutdown the affected unit(s). This aspect is of significant importance because of system sharing between units. Units 1&2 share portions of the CRVS and all three units share the WC Chillers. Therefore, entry into TS 3.0.3 from TS 3.7.16 generally requires shutdown of two or more units. Furthermore, the TS 3.0.3 requirement that shutdown be initiated within one hour causes the affected units to begin shutdown simultaneously. This requirement places an additional burden on the operators because any complex actions during the shutdown would tend to occur simultaneously on all affected units.

Because CRACS is not required to perform any immediate actions post-accident, the safety significance of CRACS does not warrant the current requirement to immediately enter into TS 3.0.3 upon loss of both trains. Past history indicates that entries into the existing Condition E action statement occurred due to difficulties that were resolved, in most cases, in slightly over one hour. As a result, the current TS required the initiation of shutdown on multiple units shortly before the problem was fixed and the TS Condition exited. Therefore, multiple units went through power reduction evolutions for little or no safety benefit.

The principle benefit under the proposed TS would be additional operational flexibility to resolve minor problems prior to initiating shutdown. Overall plant safety will be improved by making this change because changes in reactor power level will not be initiated on all three units at the same time when a safety concern

does not exist. If both trains of control room cooling are inoperable for an extended period of time, the end result of the revised TS will be essentially equivalent to the present requirement because it will result in all affected Units being shutdown. If changes to plant power level were required, this change would allow operators more flexibility to sequence the initiation of shutdown of the affected units to minimize the overall impact of simultaneous shutdowns.

In addition, per the guidance of NUREG 1022, Rev 2, "Event Reporting Guidelines 10CFR 50.72 and 73," entry into TS 3.0.3 as required by the current TS imposes reporting requirements for events that would not be reportable under the proposed revision.

b) The existing Condition D is resequenced to Condition E in order to preserve the flow and readability of this specification.

c) Conditions B and D (revised) are reworded to refer to "required trains" being inoperable. ONS currently has two permanently installed chillers. The current TS bases credit installation of a temporary chiller as a substitute for one of the permanent chillers. ONS management is currently evaluating installation of a third permanent chiller. The change to refer to "required trains" would not change the current requirement for two OPERABLE trains, and would preserve the current requirement if or when a third chiller (temporary or permanent) is installed.

4.2 UFSAR Chapter Design Basis Changes

NONE

4.3 Technical Specification Bases

Technical Specification Bases 3.7.16 are revised solely to reflect the TS changes described above.

5.0 REGULATORY ANALYSES

5.1 No Significant Hazards Determination

Duke Energy Corporation (Duke) has evaluated whether or not a significant hazards consideration is involved

with the proposed change by focusing on the three standards set forth in 10CFR 50.92 as discussed below:

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

   Response: No

   Loss of CRACS for the duration of the Completion Time is not a safety concern because equipment in the control area is suitable for considerably higher temperatures than will be experienced within the Completion Time.

   The accidents evaluated in the UFSAR are not initiated by the CRACS or loss of the CRACS. Furthermore, the CRACS is not directly credited for mitigation of the accidents evaluated in the UFSAR. The CRACS does perform a support function to maintain environmental conditions for equipment that does help mitigate accidents. The proposed change does extend the total time from loss of a second required train until entry into the required MODEs. However, analysis confirms that the CRACS function is not required for a number of hours (ie 18 or more), which is substantially greater than the proposed Completion Time of 6 hours. The proposed Completion Time of 6 hours allows reasonable time for restoration prior to initiation of shutdown while leaving sufficient time to reach hot shutdown. The probability of an accident or event occurring during this Completion Time is acceptably low.

   The current TS may require simultaneous reduction in power and shutdown of all three Units. Such action is not without some risk. Allowing the requested limited additional time to restore control area cooling reduces some risk factors by not changing plant power level in response to a minor problem that does not constitute a safety concern. If the initiation of shutdown of the affected units does become necessary, this change would allow operators more flexibility to sequence the shutdowns to minimize overall operator burden and the impact of simultaneous shutdowns.

   In summary, this change will not involve a significant increase in the probability or

consequences of any previously evaluated accident.

2. Do the proposed changes create the possibility of new or different kind of accident from any previously evaluated?

   Response· No

   No new or different kind of accident has been identified as a result of this Technical Specification change.

3. Do the proposed changes involve a significant reduction in a margin of safety?

   Response: No

   The accidents evaluated in the UFSAR are not initiated by the CRACS or loss of the CRACS. The loss of the CRACS was screened out of the Oconee PRA and is not modeled in the present Oconee PRA as either an initiating event or as a support system failure. Temperature transient analyses calculate the time to reach the limiting design temperature of required systems, structures, or components supported by CRACS. Current analyses show CRACS is not required to perform a support function for at least 18 hours.

   This 18 hour time is not used to calculate the consequences or impact on fission product barriers if CRACS is not restored. Instead this time is used to prioritize activities to restore CRACS and is substantially greater than the proposed 6 hour Completion Time. As discussed above, this allows reasonable time for restoration prior to initiation of shutdown, while leaving sufficient time to reach hot shutdown. Since either the CRACS function will be restored or the affected unit(s) will be shutdown, this change would not result in a change of, or challenge to, the design basis limit for a fission product barrier.

   This change does not involve a departure from a method of evaluation used for evaluating behavior or response of the facility or supported components.

5.2 Precedent Licensing Actions

1. Discuss and emphasize the LAR's consistency with the Standard Technical Specifications.

   The current TS is in accordance with Standard TS 3.7.11 for B&W plants (Reference 6.3). However, the basis for STS 3.7.11 is that the system performs an emergency function. As discussed above, the Oconee CRACS does not perform an immediate emergency function, and is not required for at least 18 hours after an event.

2. Reference any applicable Tech Spec Task Force travelers.

   This change is in alignment with Initiative 6 of the NEI Risk Informed Improved Tech Spec Task Force. Initiative 6 addresses the issue that TS 3.0.3 requirements to immediately shutdown the affected unit(s) may not be the least risk alternative. One aspect of Initiative 6 is to generate condition specific action statements, which is what this TS change does, rather than default to TS 3.0.3.

3. Other Sites with similar Technical Specification provisions already approved by the NRC:

   A) By letter dated 7/14/1998, the NRC approved a similar TS provision (TS 3.7.4 Condition B) for Brown's Ferry, which allows all trains of Control Room Air Conditioning to be inoperable for 24 hours. (Reference 6.4)

   B) By letter dated 11/26/2000, the NRC approved a similar TS provision (TS 3/4 7.7, Action c) for South Texas Project, Units 1 and 2, which allows all trains of the Control Room Makeup and Cleanup Filtration System, which performs the control room temperature control function, to be inoperable for 12 hours. (Reference 6.5)

4. Incorporate risk-informed insights/techniques into the LAR justification if at all possible. Risk-informed LARs receive priority treatment during the NRC review and approval process.

   The loss of the CRACS is not an immediate transient but slow moving based on a gradual

temperature rise. Analysis has shown that after 18 hours following a loss of HVAC to the Control Room and other areas served by the CRACS, postulated ambient temperatures will not challenge equipment design temperatures so as to compromise the functionality of equipment. Prior to equipment temperature problems, the plant staff has time to react and resolve the issue.

Therefore, the risk impact of the CRACS is considered minimal so the loss of the CRACS was screened out of the Oconee PRA and is not modeled in the present Oconee PRA as either an initiating event or as a support system failure. As a result, the calculated Core Damage Frequency (CDF) is not impacted by changes to the CRACS.

The proposed change reduces the risk to the public since it allows for a more controlled shutdown of the affected Oconee units in the event of inoperability of the CRACS.

5.3 CATEGORICAL EXCLUSION FROM THE REQUIREMENT FOR AN ENVIRONMENTAL ASSESSMENT/IMPACT STATEMENT

Because the requested TS change results in requirements similar to the existing requirements, this LAR (i) involves no significant hazards consideration, (ii) represents no significant change in the types, or significant increase in the amounts, of any effluents that may be released offsite, and (iii) does not result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, in accordance with 10CFR51.22(c)(9), this request is excluded from the requirement for an environmental assessment/impact statement.

6.0 REFERENCES

6.1 UFSAR, Oconee Nuclear Station, Last Updated 12/31/99, Section(s):

Loss of Ventilation
Habitability Systems
Control Room Ventilation
Figure 9-24 Control Room Area Ventilation and Air Conditioning System

6.2 Improved Technical Specifications, Oconee Nuclear Station, last Amended 12/16/98, Section:

3.7.16 Control Room Area Cooling System

6.3 NUREG 1430, Standardized Technical Specifications Babcock and Wilcox Plants, Vol 1, Rev 2, Section 3.7.11; and Vol 2, Rev 2 Bases 3.7.11.

6.4 July 14, 1998 letter from L. Raghavan, ONRR to J.A Scalice, TVA, RE: Amendment Nos 234, 253, and 212, Browns Ferry Nuclear Plant (TAC Nos M96431, M96432, M96433).

6.5 September 26, 2000 letter from Tae Kim, ONRR to William T. Cottle, STP Nuclear Operating Company, RE: Amendment Nos 125 and 113, South Texas Project Units 1 and 2, (TAC Nos MA3849, MA3850).

ATTACHMENT 2

MARK UP COPY OF
EXISTING TECHNICAL SPECIFICATIONS
AND
TECHNICAL SPECIFICATIONS BASES

3.7 PLANT SYSTEMS

3.7.16 Control Room Area Cooling Systems (CRACS)

LCO 3.7.16 Two CRACS trains shall be OPERABLE as follows:

a. Two trains of the Control Room Ventilation System (CRVS) shall be OPERABLE, and

b. Two trains of the Chilled Water (WC) System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRVS train inoperable.	A.1 Restore CRVS train to OPERABLE status.	30 days
B. One ^ WC train required inoperable.	B.1 Restore ^ WC train required to OPERABLE status.	30 days
C. Control Room area air temperature not within limit.	----------NOTE---------- LCO 3.0.4 is not applicable. ----------	
	C.1 Restore Control Room area air temperature within limit.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
~~D~~E. Required Action and associated Completion Time not met.	~~D~~E.1	Be in MODE 3.	12 hours
	AND		
	~~D~~E.2	Be in MODE 5.	36 hours
~~E~~D. Two CRVS trains inoperable. OR Two required WC Trains inoperable.	~~E~~D.1	~~Enter LCO 3.0.3.~~ Restore one required train to OPERABLE status	~~Immediately~~ 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify temperature in Control Room and Cable Room is ≤ 80°F and temperature in Electrical Equipment Room is ≤ 85°F.	12 hours

B 3.7 PLANT SYSTEMS

B 3.7.16 Control Room Area Cooling Systems (CRACS)

BASES

BACKGROUND

The CRACS provides temperature control for the control areas.

The control area is defined as the control room, cable room, and equipment room for each unit. Units 1 and 2 have a shared control room, and Unit 3 has an independent control room. The cable and equipment rooms are independent for each unit. The control rooms, cable rooms, and equipment rooms for each unit contain vital electrical equipment, such as 125 VDC Vital I&C Power and 120 VAC Vital I&C Power, which is essential for achieving safe shutdown on the units. A control area portion is defined as a cable room, equipment room, or control room, for which a set of redundant CRVS cooling trains is required. The control area portions are listed in the table below. Through the use of alternative air flow paths, air handling units AHU-34 and AHU-35 provide redundant cooling to both Units 1 and 2 cable rooms.

The AHUs which cool the control areas are part of the CRVS for each unit. The Chilled Water System (WC) serves as the heat sink for the CRVS on all three units. The WC System consists of two redundant cooling trains which serve all three units.

During a LOOP event, power will be temporarily lost to the equipment within the CRVS and WC systems. Components required to restart upon restoration of power are considered active and subject to a postulated single active failure. UFSAR Section 3.11.5 (Ref. 1) requires that no single failure of an active component within these systems will prevent proper control area environmental control. Thus redundant cooling capability is required to assure that acceptable temperatures within the control area are maintained to support continued operation of vital electrical equipment that is needed for safe shutdown of the units. ~~UFSAR Section 3.11.4 (Ref. 1) requires that redundant air conditioning and ventilation equipment be available to assure that no single failure of an active component within the CRVS and WC System will prevent proper control area environmental control. During a LOOP event, power will be temporarily lost to the equipment within these systems. Upon restoration of power the equipment will be required to restart. This restart makes the equipment susceptible to a single active failure. Without redundant cooling capability, acceptable temperatures within the control area could be exceeded. This could result in the potential failure of vital electrical equipment which is needed for safe shutdown of the units.~~

BASES

BACKGROUND (continued)

The following table identifies each portion of the CRVS where redundancy is required:

Table B 3.7.16-1
CRVS Redundant Equipment

Control Area Portion	Associated CRVS Cooling Trains
Unit 1&2 Control Room	AHU-11 and AHU-12
Unit 1 Cable Room	AHU-34 and AHU-35
Unit 1 Equipment Room	AHU-22 and AHU-34
Unit 2 Cable Room	AHU-34 and AHU-35
Unit 2 Equipment Room	AHU-23 and AHU-35
Unit 3 Control Room	AHUs 3-13 and 3-14
Unit 3 Cable Room	AHUs 3-11 and 3-12
Unit 3 Equipment Room	AHUs 3-15 and 3-16

A single train will provide the required temperature control. The CRACS operation to maintain control room temperature is discussed in the UFSAR, Section 9.4.1 (Ref. 2).

APPLICABLE SAFETY ANALYSES

The design basis of the CRACS is to maintain control area temperature to ensure cooling of vital equipment.

The CRACS components are arranged in redundant trains. A single active failure of a CRACS component does not impair the ability of the system to perform as designed. The CRACS is designed to remove sensible and latent heat loads from the control area, including consideration of equipment heat loads to ensure equipment OPERABILITY.

The CRACS satisfies Criterion 3 of the NRC Policy Statement.

BASES (continued)

LCO

Two redundant trains of the ~~CRACS~~ CRVS and WC Systems train are required to be OPERABLE to ensure that at least one train in each system is available, assuming a single active failure disables the other train in one or both systems. Total system failure could result in the equipment operating temperature exceeding limits. A Train of CRVS consists of one of the redundant AHUs specified in Table B 3.7.16-1 for each of the three portions of the control area for an Oconee unit and associated ducts, dampers, instrumentation and controls. A single AHU can function as a component in more than one train on an Oconee unit and can function as a component on trains in multiple Oconee units. For example AHU-34, and its associated ducts, damper, instrumentation and controls, can simultaneously function as the AHU for a train of CRVS serving the Unit 1 cable room, the Unit 1 equipment room as well as the Unit 2 cable room. The combination of AHU-34 and either AHU-11 or AHU-12 along with their associated equipment constitutes a combination of equipment which can satisfy the requirement for one train of CRVS for Unit 1. Additionally, AHU-34 can simultaneously serve as the AHU for the portion of a Unit 2 CRVS train serving the Unit 2 cable room. AHU-35 in combination with either AHU-11 or AHU-12 along with their associated equipment constitutes a combination of equipment which can satisfy the requirement for one train of CRVS for Unit 2.

The CRACS is considered OPERABLE when the individual components that are necessary to maintain control area temperature are OPERABLE in both trains of CRVS and WC System. Each CRVS train listed in Table B 3.7.16-1 includes the associated ductwork, instrumentation, and air handling unit, which includes the fan, fan motor, cooling coils, and isolation dampers. Each WC train consists of a chiller, chilled water pump, condenser service water pump, and associated controls. Although each chilled water pump is normally associated with, and aligned to, a specific chiller, any OPERABLE chilled water pump maybe aligned to any OPERABLE chiller to maintain one OPERABLE train when a component has been removed from service. The two redundant trains can include a temporarily installed full-capacity control area cooling train. Any temporary cooling train shall have a power source with availability equivalent to the source of the permanently installed train. In addition, the CRACS must be OPERABLE to the extent that air circulation can be maintained.

APPLICABILITY

In MODES 1, 2, 3, and 4 the CRACS must be OPERABLE to ensure that the control area temperature will not exceed equipment OPERABILITY requirements.

BASES (continued)

ACTIONS

A.1

With one CRVS train inoperable for the control area, action must be taken to restore the CRVS train to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE CRVS train is adequate to maintain the control area temperature within limits. However, the overall reliability is reduced because a failure in the OPERABLE CRVS train could result in a loss of CRVS cooling function. The 30 day Completion Time is based on the low probability of a loss of CRVS cooling component and the time necessary to perform repairs to CRVS cooling equipment.

B.1

With one required WC train inoperable for a control area portion, action must be taken to restore the WC train to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE WC train is adequate to maintain the control area portion temperature within limits. However, the overall reliability is reduced because a failure in the OPERABLE WC train could result in a loss of CRACS cooling function. The 30 day Completion Time is based on the low probability of a loss of WC cooling component, and on the time necessary to perform repairs to WC cooling equipment.

C.1

With the control room area air temperature outside its limit, action must be taken to restore the air temperature to within the limit within 7 days. If the control room area air temperature exceeds its limit, the ability of a single train of CRACS to maintain control room area temperature may be affected. The Completion Time of 7 days is reasonable considering the remaining CRACS train available to perform the required temperature control function and the low probability of an event occurring that would require the CRACS operation during that time.

The Required Actions are modified by a Note that states LCO 3.0.4 is not applicable. In consideration of the redundant CRACS train available, the small variation in temperature expected between 12 hour surveillances, and the marginal impact small temperature variations may have on the ability of a CRACS train to maintain the control room temperature within limits, an exception to LCO 3.0.4 is applicable for this condition.

BASES

ACTIONS
—(continued)

D.1 ~~and D.2~~

If both CRVS trains or both required WC trains are inoperable, the CRACS may not be capable of performing the intended function. The 6 hour COMPLETION TIME is reasonable to diagnose, plan, and execute prompt action to restore at least one complete train (CRVS and WC) to OPERABLE status. This is acceptable based on the low probability of a design basis event in that brief COMPLETION TIME. This time also credits analyses that demonstrate the Control Room Area temperatures will not significantly challenge equipment temperature limits for at least 18 hours, which is substantially greater than the 6 hour COMPLETION TIME.~~If the Required Actions and associated Completion Times of Conditions A, B, or C are not met, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner without challenging unit systems.~~

E.1 and E.2

If the Required Actions and associated Completion Times of Conditions A, B, C or D are not met, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner without challenging unit systems. ~~If both CRVS trains or both WC trains are inoperable, the CRACS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.~~

SURVEILLANCE
REQUIREMENTS

SR 3.7.16.1

This SR verifies that the heat removal capability of the system is sufficient to maintain the temperature in the control room and cable room at or below 80°F and maintain the temperature in the electrical equipment room at or below 85°F. The temperature is determined by reading gauges in each area which are considered representative of the average area temperature. These temperature limits are based on operating history and are intended to provide an indication of degradation of the cooling systems. The limits are conservative with respect to equipment operability temperature limits. The values for the SR are values at which the system is removing sufficient heat to meet design requirements (i.e.,

BASES (continued)

OPERABLE) and sufficiently above the values associated with normal operation during hot weather. The temperature in the equipment room is typically slightly higher than the temperature in the control room or cable room. Because of that, a higher value is specified for this area. The 12 hour Frequency is appropriate since significant degradation of the CRACS is slow and is not expected over this time period.

REFERENCES

1. UFSAR, Section 3.11.4.

2. UFSAR, Section 9.4.1.

ATTACHMENT 3

REVISED TECHNICAL SPECIFICATIONS
AND
TECHNICAL SPECIFICATIONS BASES

Remove Pages	Replace Pages
3.7.16-1	3.7.16-1
3.7.16-2	3.7.16-2
B 3.7.16-1	B 3.7.16-1
B 3.7.16-2	B 3.7.16-2
B 3.7.16-3	B 3.7.16-3
B 3.7.16-4	B 3.7.16-4
B 3.7.16-5	B 3.7.16-5

3.7 PLANT SYSTEMS

3.7.16 Control Room Area Cooling Systems (CRACS)

LCO 3.7.16 Two CRACS trains shall be OPERABLE as follows:

a. Two trains of the Control Room Ventilation System (CRVS) shall be OPERABLE, and

b. Two trains of the Chilled Water (WC) System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRVS train inoperable.	A.1 Restore CRVS train to OPERABLE status.	30 days
B. One required WC train inoperable.	B.1 Restore required WC train to OPERABLE status.	30 days
C. Control Room area air temperature not within limit.	----------NOTE---------- LCO 3.0.4 is not applicable. ----------	
	C.1 Restore Control Room area air temperature within limit.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two CRVS trains inoperable. OR Two required WC Trains inoperable.	D.1 Restore one required train to OPERABLE status	6 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify temperature in Control Room and Cable Room is $\leq$ 80°F and temperature in Electrical Equipment Room is $\leq$ 85°F.	12 hours

B 3.7 PLANT SYSTEMS

B 3.7.16 Control Room Area Cooling Systems (CRACS)

BASES

BACKGROUND

The CRACS provides temperature control for the control areas.

The control area is defined as the control room, cable room, and equipment room for each unit. Units 1 and 2 have a shared control room, and Unit 3 has an independent control room. The cable and equipment rooms are independent for each unit. The control rooms, cable rooms, and equipment rooms for each unit contain vital electrical equipment, such as 125 VDC Vital I&C Power and 120 VAC Vital I&C Power, which is essential for achieving safe shutdown on the units. A control area portion is defined as a cable room, equipment room, or control room, for which a set of redundant CRVS cooling trains is required. The control area portions are listed in the table below. Through the use of alternative air flow paths, air handling units AHU-34 and AHU-35 provide redundant cooling to both Units 1 and 2 cable rooms.

The AHUs which cool the control areas are part of the CRVS for each unit. The Chilled Water System (WC) serves as the heat sink for the CRVS on all three units. The WC System consists of two redundant cooling trains which serve all three units.

During a LOOP event, power will be temporarily lost to the equipment within the CRVS and WC systems. Components required to restart upon restoration of power are considered active and subject to a postulated single active failure. UFSAR Section 3.11.5 (Ref. 1) requires that no single failure of an active component within these systems will prevent proper control area environmental control. Thus redundant cooling capability is required to assure that acceptable temperatures within the control area are maintained to support continued operation of vital electrical equipment that is needed for safe shutdown of the units.

BASES

BACKGROUND (continued)

The following table identifies each portion of the CRVS where redundancy is required:

Table B 3.7.16-1
CRVS Redundant Equipment

Control Area Portion	Associated CRVS Cooling Trains
Unit 1&2 Control Room	AHU-11 and AHU-12
Unit 1 Cable Room	AHU-34 and AHU-35
Unit 1 Equipment Room	AHU-22 and AHU-34
Unit 2 Cable Room	AHU-34 and AHU-35
Unit 2 Equipment Room	AHU-23 and AHU-35
Unit 3 Control Room	AHUs 3-13 and 3-14
Unit 3 Cable Room	AHUs 3-11 and 3-12
Unit 3 Equipment Room	AHUs 3-15 and 3-16

A single train will provide the required temperature control. The CRACS operation to maintain control room temperature is discussed in the UFSAR, Section 9.4.1 (Ref. 2).

APPLICABLE SAFETY ANALYSES

The design basis of the CRACS is to maintain control area temperature to ensure cooling of vital equipment.

The CRACS components are arranged in redundant trains. A single active failure of a CRACS component does not impair the ability of the system to perform as designed. The CRACS is designed to remove sensible and latent heat loads from the control area, including consideration of equipment heat loads to ensure equipment OPERABILITY.

The CRACS satisfies Criterion 3 of the NRC Policy Statement.

BASES (continued)

LCO

Two redundant trains of the CRVS and WC Systems train are required to be OPERABLE to ensure that at least one train in each system is available, assuming a single active failure disables the other train in one or both systems. Total system failure could result in the equipment operating temperature exceeding limits. A Train of CRVS consists of one of the redundant AHUs specified in Table B 3.7.16-1 for each of the three portions of the control area for an Oconee unit and associated ducts, dampers, instrumentation and controls. A single AHU can function as a component in more than one train on an Oconee unit and can function as a component on trains in multiple Oconee units. For example AHU-34, and its associated ducts, damper, instrumentation and controls, can simultaneously function as the AHU for a train of CRVS serving the Unit 1 cable room, the Unit 1 equipment room as well as the Unit 2 cable room. The combination of AHU-34 and either AHU-11 or AHU-12 along with their associated equipment constitutes a combination of equipment which can satisfy the requirement for one train of CRVS for Unit 1. Additionally, AHU-34 can simultaneously serve as the AHU for the portion of a Unit 2 CRVS train serving the Unit 2 cable room. AHU-35 in combination with either AHU-11 or AHU-12 along with their associated equipment constitutes a combination of equipment which can satisfy the requirement for one train of CRVS for Unit 2.

The CRACS is considered OPERABLE when the individual components that are necessary to maintain control area temperature are OPERABLE in both trains of CRVS and WC System. Each CRVS train listed in Table B 3.7.16-1 includes the associated ductwork, instrumentation, and air handling unit, which includes the fan, fan motor, cooling coils, and isolation dampers. Each WC train consists of a chiller, chilled water pump, condenser service water pump, and associated controls. Although each chilled water pump is normally associated with, and aligned to, a specific chiller, any OPERABLE chilled water pump maybe aligned to any OPERABLE chiller to maintain one OPERABLE train when a component has been removed from service. The two redundant trains can include a temporarily installed full-capacity control area cooling train. Any temporary cooling train shall have a power source with availability equivalent to the source of the permanently installed train. In addition, the CRACS must be OPERABLE to the extent that air circulation can be maintained.

APPLICABILITY

In MODES 1, 2, 3, and 4 the CRACS must be OPERABLE to ensure that the control area temperature will not exceed equipment OPERABILITY requirements.

BASES (continued)

ACTIONS

A.1

With one CRVS train inoperable for the control area, action must be taken to restore the CRVS train to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE CRVS train is adequate to maintain the control area temperature within limits. However, the overall reliability is reduced because a failure in the OPERABLE CRVS train could result in a loss of CRVS cooling function. The 30 day Completion Time is based on the low probability of a loss of CRVS cooling component and the time necessary to perform repairs to CRVS cooling equipment.

B.1

With one required WC train inoperable for a control area portion, action must be taken to restore the WC train to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE WC train is adequate to maintain the control area portion temperature within limits. However, the overall reliability is reduced because a failure in the OPERABLE WC train could result in a loss of CRACS cooling function. The 30 day Completion Time is based on the low probability of a loss of WC cooling component, and on the time necessary to perform repairs to WC cooling equipment.

C.1

With the control room area air temperature outside its limit, action must be taken to restore the air temperature to within the limit within 7 days. If the control room area air temperature exceeds its limit, the ability of a single train of CRACS to maintain control room area temperature may be affected. The Completion Time of 7 days is reasonable considering the remaining CRACS train available to perform the required temperature control function and the low probability of an event occurring that would require the CRACS operation during that time.

The Required Actions are modified by a Note that states LCO 3.0.4 is not applicable. In consideration of the redundant CRACS train available, the small variation in temperature expected between 12 hour surveillances, and the marginal impact small temperature variations may have on the ability of a CRACS train to maintain the control room temperature within limits, an exception to LCO 3.0.4 is applicable for this condition.

BASES

ACTIONS (continued)

D.1

If both CRVS trains or both required WC trains are inoperable, the CRACS may not be capable of performing the intended function. The 6 hour Completion Time is reasonable to diagnose, plan, and execute prompt action to restore at least one complete train (CRVS and WC) to OPERABLE status. This is acceptable based on the low probability of a design basis event in that brief Completion Time. This time also credits analyses that demonstrate the Control Room Area temperatures will not significantly challenge equipment temperature limits for at least 18 hours, which is substantially greater than the 6 hour Completion Time.

E.1 and E.2

If the Required Actions and associated Completion Times of Conditions A, B, C or D are not met, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.16.1

This SR verifies that the heat removal capability of the system is sufficient to maintain the temperature in the control room and cable room at or below 80°F and maintain the temperature in the electrical equipment room at or below 85°F. The temperature is determined by reading gauges in each area which are considered representative of the average area temperature. These temperature limits are based on operating history and are intended to provide an indication of degradation of the cooling systems. The limits are conservative with respect to equipment operability temperature limits. The values for the SR are values at which the system is removing sufficient heat to meet design requirements (i.e., OPERABLE) and sufficiently above the values associated with normal operation during hot weather. The temperature in the equipment room is typically slightly higher than the temperature in the control room or cable room. Because of that, a higher value is specified for this area. The 12 hour Frequency is appropriate since significant degradation of the CRACS is slow and is not expected over this time period.

REFERENCES

1. UFSAR, Section 3.11.4.
2. UFSAR, Section 9.4.1.