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January 27, 2000

2CAN010004

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

Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Proposed Technical Specification Change Revising Required Actions Associated With Inoperable Control Room Emergency Ventilation or Cooling Systems During Movement of Irradiated Fuel

Gentlemen:

Attached for your review and approval are proposed changes to the Arkansas Nuclear One – Unit 2 (ANO-2) Technical Specifications (TS). The proposed changes affect ANO-2 Control Room Emergency Ventilation and Cooling Systems and the associated bases. Current requirements, when operating in Modes 1, 2, 3, or 4 are consistent with the Revised Standard Technical Specifications (RSTS). However, operations during the handling of irradiated fuel are not consistent with the RSTS and presently are not specifically addressed within the specification. Therefore, the purpose of this submittal is to apply the requirements of the RSTS associated with Control Room Emergency Ventilation and Cooling Systems to the current ANO-2 TSs during the handling of irradiated fuel.

Revisions to the ANO - Unit 1 (ANO-1) TSs are not proposed via this submittal. The contents of the RSTS related to control room ventilation are being incorporated in the ANO-1 conversion to the improved TSs. Therefore, this submittal will remain specific to the ANO-2 TSs alone.

The existing ANO-2 TSs apply a shutdown to cold shutdown action when the Control Room Emergency Ventilation or Air Conditioning System (CREVACS) is inoperable and not restored within the allowable outage time (AOT) of Specification 3.7.6.1. However, this specification is also applicable during the handling of irradiated fuel which often occurs in the lower modes of operation (i.e., Mode 5, 6, or when defueled). The current specification does not address actions to be taken during events when the handling of irradiated fuel is in progress during these shutdown modes of operation when AOTs associated with the CREVCS are not met. In addition, no provision is made for the exclusion of the requirements of Specification 3.0.4, which is not applicable to CREVACS when handling irradiated fuel since no shutdown is required. The exclusion of the requirements of Specification 3.0.4 is consistent with that of the RSTS.

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Although the AOTs associated with CREVCS within the RSTS are consistent with the current ANO-2 specification, the RSTS provides additional appropriate action to be taken if the CREVCS is inoperable beyond the AOT when handling irradiated fuel in any mode of operation. Once the allowable period for restoration has passed, the RSTS requires the remaining operable CREVCS to be placed in service and/or the control room ventilation system to be placed in the emergency recirc mode of operation until the redundant system is restored to an operable status; otherwise, the handling of irradiated fuel must be suspended. This action acts to verify the continued operability of the remaining train, prevents failures associated with automatic actuation of the system, and ensures any active failure will be readily detected. Additionally, the provisions of Specification 3.0.4 are not applicable, allowing start of fuel handling activities if one CREVCS train is inoperable, assuming the associated actions are being complied with. These actions are consistent with those normally associated with shutdown mode equipment operability and with the RSTS.

This proposed changes have been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that these changes involve no significant hazards considerations. The bases for these determinations are included in the attached submittal.

Entergy Operations, Inc. requests approval of the proposed changes by September 1, 2000, with an implementation period of 30 days.

Very truly yours,

CRH/dbb
Attachment

To the best of my knowledge and belief, the statements contained in this submittal are true.

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for Johnson **County and the State of Arkansas, this** 27 **day of** January **, 2000.**

Juana M. Tapp
Notary Public
My Commission Expires 11-8-2000

OFFICIAL SEAL
JUANA M. TAPP
NOTARY PUBLIC - ARKANSAS
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My Commission Expires: 11 - 8 - 2000

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ATTACHMENT 1

TO

2CAN010004

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NO. NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT ONE AND UNIT TWO

DOCKET NO. 50-368

DESCRIPTION OF PROPOSED CHANGES

The proposed changes to the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications (TS) are necessary to provide appropriate actions to be taken for inoperable Control Room Emergency Ventilation or Air Conditioning Systems (CREVACS) during the handling of irradiated fuel. The acronym CREVCS will be used throughout this submittal to refer to both the ventilation and cooling portions of the system unless otherwise stated. The following changes are proposed:

- Revise Actions (a), (b), and (c) of Specification 3.7.6.1 to apply these actions when in Modes 1, 2, 3, and 4. This was accomplished by placing a heading above the actions.

- Add a new heading and new Actions (d), (e), and (f) specifying the actions to be taken during the handling of irradiated fuel should a CREVACS become inoperable. These actions are consistent with the Revised Standard Technical Specifications (RSTS). In addition, an exclusion to Specification 3.0.4 is included in this action.

- Due to space limitations, the surveillance requirements of Specification 3.7.6.1 on TS pages 3/4 7-17, 3/4 7-18, and 3/4 7-19 have been moved accordingly. No technical changes were made to these requirements and, therefore, no further discussion is presented concerning this change in this submittal.

- The footer at the bottom of TS page 3/4 7-19 directs the user to refer to TS page 3/4 7-22 as the next page. TS pages 3/4 7-20 and 3/4 7-21 are intentionally left blank and are being deleted. No further discussion is presented concerning this change within this submittal.

- Added appropriate information to the bases of Specification 3.7.6.1 associated with the actions to be taken during the handling of irradiated fuel.

BACKGROUND

The current control room ventilation system involves shared unit subsystems, one for ANO - Unit 1 (ANO-1) and another for ANO-2. Each subsystem includes a CREVACS. Air conditioning for both control rooms under isolated control room conditions is maintained by emergency air handling and condenser units located in the ANO-2 portion of the control room. The air conditioners are normally powered from vital buses in ANO-2, but one emergency air handling and condenser unit can be temporarily powered from a vital bus in ANO-1. The ANO-1 control room ventilation systems are described in ANO-1 Safety Analysis Report (SAR) Sections 1.7.2 and 9.7.2.1. The ANO-2 system is described in ANO-2 SAR Sections 1.2.2.10.B and 9.4.1. The ANO-1 and ANO-2 control rooms are located adjacent to each other. The control panels and equipment are physically separated by glass doors to eliminate interaction between the ANO-1 and ANO-2 systems. The glass doors do not extend to the ceiling and are open at the top to allow the ventilation systems to be shared by the two control rooms, comprising a common control room ventilation envelope.

The Control Room Emergency Ventilation System (CREVS) is designed to reduce the potential control room operator dose from a radiological accident to within the General Design Criterion 19 limits. The CREVS consists of two redundant filter trains, both of which are located outside the ANO-1 section of the common control room. Each filter train includes a centrifugal fan, a roughing filter, a high efficiency particulate (HEPA) filter, and a charcoal adsorber. Besides recirculation and filtration of control room air, filtered outside makeup air is also provided to pressurize the control room in order to minimize unfiltered air in-leakage into the control room under isolated conditions. Dampers are also included which act to isolate the control room from the normal ventilation system upon receipt of a high radiation or high chlorine signal. In the event that high radiation or chlorine is detected, the normal control room ventilation systems of both ANO-1 and ANO-2 are automatically isolated and both trains of the CREVS are automatically actuated. Smoke detectors are also available to isolate the control room and provide operators the opportunity to exhaust the control room areas, depending on whether the smoke has originated from within or from outside the control room.

The CREVS filtration train for each unit consists of an emergency filter and fan unit and its associated filters. The ANO-1 filter train is located above the ANO-1 control room in the computer room. Outside air, drawn from the computer room and turbine building, is supplied for ANO-1 control room makeup when the ANO-1 CREVS is placed in operation. The ANO-1 recirculated air flow is filtered by a roughing filter, a HEPA filter, and a 2-inch charcoal tray adsorber. The arrangement results in filtering the makeup air flow through 4 inches of charcoal adsorber as defined in Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," Revision 2, March 1978, Table 2.

The ANO-2 filter train is located in the ANO-1 Auxiliary Building. The ANO-2 filter train rated flow consists of recirculation air, taken from and returned to the control room envelope, and outside air drawn from the ANO-1 Auxiliary Building and supplied for control room makeup when the ANO-2 CREVS is placed in operation. After mixing, the recirculated air and the makeup air flows for ANO-2 are filtered by a roughing filter, HEPA filter, and a 4-inch deep bed charcoal adsorber. The ANO-1 and ANO-2 emergency filter and fan unit trains are not equipped with heaters and are not designed to control the relative humidity of the ventilation flow steam.

Recently approved revisions to the CREVACS TSs for both ANO-1 and ANO-2 via Amendments 196 and 206, respectively, added an additional applicability for CREVACS operability whenever the handling of irradiated fuel is in progress. However, actions required to be implemented upon CREVCS inoperability were addressed for plant conditions while in Modes 1, 2, 3, or 4. No actions to address such inoperability while handling irradiated fuel were addressed. Because the CREVACS must be available to protect control room operators from excessive radiation exposure should a fuel handling accident occur, appropriate actions need to be included within the TSs to address such inoperability when handling irradiated fuel.

Revisions to the ANO-1 TSs are not proposed via this submittal. The contents of the RSTS associated with control room ventilation are being incorporated with the ANO-1 conversion to the improved TSs, expected to be submitted within short duration following this submittal. Therefore, this submittal will remain specific to the ANO-2 TSs alone.

The current TS actions associated with CREVACS inoperability in Modes 1, 2, 3, and 4 are consistent with that of the RSTS. However, the RSTS additionally requires further action, regardless of plant mode, during the handling of irradiated fuel. Such actions include the starting of the remaining operable cooling system for inoperability associated only with the emergency cooling system, and placing of the control room ventilation system in the emergency recirc mode of operation when the emergency ventilation system is inoperable. These additional actions are applicable at all times during the handling of irradiated fuel and must be applied when the allowable restoration periods currently provided in the TSs are exhausted. The application of these additional actions ensures that the remaining train is operable, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected. For conditions where these actions cannot be applied, the handling of irradiated fuel must be suspended in order to reduce the probability that a fuel handling accident might occur leading to personnel exposure within the control room. However, the suspension of the handling of irradiated fuel is not intended to prevent the fuel assemblies from being placed in a safe position.

Additionally, in order to acquire greater consistency with the RSTS and current TS philosophies regarding equipment requirements in lower modes of operation, the actions associated with the handling of irradiated fuel are exempted for the requirements of Specification 3.0.4. The provisions of Specification 3.0.4 remain applicable to all operations involving CREVACS in Modes 1, 2, 3, and 4, whether or not the handling of irradiated fuel is in progress. However, indefinite operation is possible in Modes 5, 6 or defueled during the handling of irradiated fuel when one train of CREVACS is inoperable. Since indefinite operation is allowed, Specification 3.0.4 should not be applicable in this condition. The aforementioned exclusion will allow the handling of irradiated fuel to commence, for example, in Mode 6 even if one CREVACS is inoperable, provided the associated actions of Specification 3.7.6.1 are being complied with. This change acts to satisfy the intent of the RSTS and provide further consistency between the RSTS and the current TSs.

DISCUSSION OF CHANGE

As discussed previously, the actions associated with Specification 3.7.6.1 have been divided into two separate categories: those required to be implemented during plant operation in Modes 1, 2, 3, or 4, and those required in any plant mode or condition whenever the handling of irradiated fuel is in progress. Because different allowable restoration periods are provided dependent on the portion of the ventilation/cooling system that is inoperable, the same process flow was used in the new section associated with the handling of irradiated fuel. The allowable restoration periods have not been changed. Instead, the action required at the end of the restoration periods differs from those required in Modes 1, 2, 3, and 4. The following discussion is applicable to actions required during the handling of irradiated fuel, in any mode of operation.

When the control room emergency ventilation system becomes inoperable and the 7-day allowable restoration period has been exhausted, the control room ventilation system must be placed in the emergency recirc mode of operation. This includes the isolation of the control room and starting of the emergency ventilation system. For ANO-2, since isolation of the control room will result in the loss of the normal cooling system, the operable emergency cooling unit is also manually started. When the control room emergency cooling system becomes inoperable, the redundant operable emergency cooling unit must be placed in operation. The emergency ventilation system is not impacted by the loss of a cooling unit and, therefore, there is no requirement to place the control room ventilation system in the emergency recirc mode of operation in this case. These actions act to ensure the operability of the remaining system, eliminate the reliance on automatic actuation where applicable, and ensure that any active failure will be readily detected. In the event that both trains of emergency ventilation or cooling become inoperable, or if the above actions cannot be complied with, the handling of irradiated fuel must be suspended. Such suspension does not preclude the placement of fuel assemblies in a safe position.

The above actions include an exclusion from the provisions of Specification 3.0.4. This is consistent with current TS philosophy and with the RSTS. Additions to the applicable bases have also been included to provide discussion concerning the actions associated with CREVACS during the handling of irradiated fuel. The proposed changes provide actions for CREVACS inoperability during the handling of irradiated fuel that are in addition to those presently required when operating in Modes 1, 2, 3, and 4.

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Entergy Operations, Inc. is proposing that the Arkansas Nuclear One, Unit 2 (ANO-2) Operating Licenses be amended to provide actions that shall be implemented, associated with the inoperability of control room emergency ventilation or cooling system components, during the handling of irradiated fuel. Current ANO-2 TSs require a plant shutdown if a control room emergency ventilation or cooling system is inoperable in excess of the allowable restoration period while the unit is in Modes 1, 2, 3, or 4. However, no separate actions address such inoperability specifically in the case of handling irradiated fuel, regardless of the plant mode of operation. Therefore, the proposed revisions will require the control room ventilation system to be placed in the emergency recirc mode of operation if one control room emergency ventilation system remains inoperable beyond its allowable restoration period during the handling of irradiated fuel. In addition, the operable emergency cooling system must be placed in operation when one control room emergency cooling system remains inoperable beyond its allowable restoration period during the handling of irradiated fuel. If performing these actions is not possible or if both trains of either the emergency ventilation or emergency cooling system are found inoperable, then activities involving the handling of irradiated fuel must be suspended. Suspending such fuel handling activities will not preclude placing the fuel assemblies in a safe position. These actions are consistent with the Revised Standard Technical Specifications (RSTS).

An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards considerations using the standards in 10CFR50.92(c). A discussion of these standards as they relate to this amendment request follows:

Criterion 1 - Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

The inclusion of additional actions within the ANO-2 TSs associated with the control room emergency ventilation and air conditioning systems during the handling of irradiated fuel does not require any physical modification to plant components or systems. Implementing the proposed actions act to ensure the operability of the remaining system, eliminate the reliance on automatic actuation where applicable, and ensure that any active failure will be readily detected. The proposed changes, therefore, act to ensure the consequences of a fuel handling accident are mitigated and have no impact on the probability a fuel handling accident occurring. The proposed actions are in addition to those currently required by the ANO-2 TSs and, therefore, are more restrictive.

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

Criterion 2 - Does Not Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated.

The inclusion of additional actions within the ANO-2 TSs associated with the control room emergency ventilation and air conditioning systems during the handling of irradiated fuel does not require any physical modification to plant components or systems. Implementing the proposed actions act to ensure the operability of the remaining system, eliminate the reliance on automatic actuation where applicable, and ensure that any active failure will be readily detected. The proposed changes, therefore, are not relevant to creating new or different kinds of accidents than those previously evaluated. The proposed actions are in addition to those currently required by the ANO-2 TSs.

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

Criterion 3 - Does Not Involve a Significant Reduction in the Margin of Safety.

The inclusion of additional actions within the ANO-2 TSs associated with the control room emergency ventilation and air conditioning systems during the handling of irradiated fuel act to ensure the operability of the remaining system, eliminate the reliance on automatic actuation where applicable, and ensure that any active failure

will be readily detected. The proposed changes, therefore, act to maintain the margin to safety by ensuring the operability of redundant equipment that is required to protect control room personnel in the event of a fuel handling accident. The proposed actions are in addition to those currently required by the ANO-2 TSs and, therefore, are more restrictive.

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

Therefore, based on the reasoning presented above and the previous discussion of the amendment request, Entergy Operations, Inc. has determined that the requested changes do not involve a significant hazards consideration.

ENVIRONMENTAL IMPACT EVALUATION

10 CFR 51.22(c) provides criteria for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration, (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released off-site, or (3) result in a significant increase in individual or cumulative occupational radiation exposure. Entergy Operations, Inc. has reviewed this license amendment and has determined that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the proposed license amendment. The bases for this determination is as follows:

1. The proposed license amendment does not involve a significant hazards consideration as described previously in the evaluation.

2. As discussed in the significant hazards evaluation, this change does not result in a significant change or significant increase in the radiological doses for any Design Based Accident. The proposed license amendment does not result in a significant change in the types or a significant increase in the amounts of any effluents that may be released off-site.

3. The proposed license amendment does not result in a significant increase to the individual or cumulative occupational radiation exposure because this does not modify the method of operation of systems and components necessary to prevent a radioactive release.

PROPOSED ANO-2 TECHNICAL SPECIFICATION CHANGES

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent control room emergency ventilation and air conditioning systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, or during handling of irradiated fuel.

ACTION:

MODES 1, 2, 3, and 4

a. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable, restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days and restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

During Handling of Irradiated Fuel

d. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation; otherwise, suspend all activities involving the handling of irradiated fuel. The provisions of Specification 3.0.4 are not applicable.

e. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation; otherwise, suspend all activities involving the handling of irradiated fuel. The provisions of Specification 3.0.4 are not applicable.

f. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable:

   1. restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation, and

   2. restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation;

   3. otherwise, suspend all activities involving the handling of irradiated fuel.

   4. The provisions of Specification 3.0.4 are not applicable.

g. With both control room emergency air conditioning systems or both control room emergency ventilation systems inoperable, immediately suspend all activities involving the handling of irradiated fuel.

SURVEILLANCE REQUIREMENTS (Continued)

4.7.6.1.1 Each control room emergency air conditioning system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by:

1. Starting each unit from the control room, and

2. Verifying that each unit operates for at least 1 hour and maintains the control room air temperature ≤ 84°F D.B.

b. At least once per 18 months by verifying a system flow rate of 9900 cfm ± 10%.

4.7.6.1.2 Each control room emergency air filtration system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 2000 cfm ± 10%.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 when tested at 30°C and 95% relative humidity for a methyl iodide penetration of:

a. ≤ 2.5% for 2 inch charcoal adsorber beds, or

b. ≤ 0.5% for 4 inch charcoal adsorber beds.

3. Verifying a system flow rate of 2000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 when tested at 30°C and 95% relative humidity for a methyl iodide penetration of:

1. ≤ 2.5% for 2 inch charcoal adsorber beds, or

2. ≤ 0.5% for 4 inch charcoal adsorber beds.

SURVEILLANCE REQUIREMENTS (continued)

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the system at a flow rate of 2000 cfm ± 10%.

2. Verifying that on a control room high radiation test signal, the system automatically isolates the control room within 10 seconds and switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 2000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 2000 cfm ±10%.

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

The OPERABILITY of the control room emergency ventilation and air conditioning system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50.

Unit 1 and Unit 2 control rooms are a single environment for emergency ventilation and air conditioning concerns. Since the control room emergency ventilation and air conditioning equipment is shared between units, the plant status of both units must be considered when determining applicability of the specification.

Due to the unique situation of the shared emergency ventilation and air conditioning equipment, the components may be cross fed from the opposite unit per predetermined contingency actions/procedures. Unit 1 may take credit for operability of these systems when configured to achieve separation and independence regardless of normal power and/or service water configuration. This will be in accordance with pre-determined contingency actions/procedures.

The control room emergency ventilation system consists of two independent filter and fan trains, two independent actuation channels and the Control Room isolation dampers. The control room dampers isolate the control room within 10 seconds of receipt of a high radiation signal.

If the actuation signal can not start the emergency ventilation recirculation fan, operating the affected fan in the manual recirculation mode and isolating the control room isolation dampers provides the required design function of the control room emergency ventilation system to isolate the combined control rooms to ensure that the control rooms will remain habitable for operations personnel during and following accident conditions. This contingency action should be put in place immediately (within 1 hour) to fully satisfy the design functions of the control room emergency ventilation system.

The control room emergency air conditioning system (CREACS) provides temperature control for the control room following isolation of the control room. It is manually started from the Unit 2 Control Room. The CREACS consists of two independent and redundant trains that provide cooling of recirculated control room air. A cooling coil and a water cooled condensing unit are provided for each system to provide suitable temperature conditions in the control room for operating personnel and safety related control equipment.

With both trains of the control room emergency ventilation and/or emergency air conditioning inoperable, the function of the control room emergency air systems have been lost, requiring immediate action to place the unit in a condition where the specification does not apply.

The actions associated with the control room emergency ventilation and air conditioning systems ensure that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected. Fuel handling is suspended if neither train is OPERABLE or if the actions cannot be applied. Suspending fuel handling activities acts to place the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies to a safe position.

MARKUP OF CURRENT ANO-2 TECHNICAL SPECIFICATIONS

(FOR INFO ONLY)

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent control room emergency ventilation and air conditioning systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, ~~and~~ or during handling of irradiated fuel.

ACTION:

MODES 1, 2, 3, and 4

a. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable, restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days and restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

During Handling of Irradiated Fuel

d. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation; otherwise, suspend all activities involving the handling of irradiated fuel. The provisions of Specification 3.0.4 are not applicable.

e. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation; otherwise, suspend all activities involving the handling of irradiated fuel. The provisions of Specification 3.0.4 are not applicable.

f. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable:

1. restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation, and

2. restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation;

3. otherwise, suspend all activities involving the handling of irradiated fuel.

4. The provisions of Specification 3.0.4 are not applicable.

g. With both control room emergency air conditioning systems or both control room emergency ventilation systems inoperable, immediately suspend all activities involving the handling of irradiated fuel.

~~SURVEILLANCE REQUIREMENTS~~

~~4.7.6.1.1 Each control room emergency air conditioning system shall be demonstrated OPERABLE:~~

~~a. At least once per 31 days on a STAGGERED TEST BASIS by:~~

~~1. Starting each unit from the control room, and~~

~~2. Verifying that each unit operates for at least 1 hour and maintains the control room air temperature ≤ 84°F D.B.~~

~~b. At least once per 18 months by verifying a system flow rate of 9900 cfm ± 10%.~~

~~4.7.6.1.2 Each control room emergency air filtration system shall be demonstrated OPERABLE:~~

~~a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.~~

~~b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:~~

SURVEILLANCE REQUIREMENTS (Continued)

4.7.6.1.1 Each control room emergency air conditioning system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by:

1. Starting each unit from the control room, and

2. Verifying that each unit operates for at least 1 hour and maintains the control room air temperature ≤ 84°F D.B.

b. At least once per 18 months by verifying a system flow rate of 9900 cfm ± 10%.

4.7.6.1.2 Each control room emergency air filtration system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 2000 cfm ± 10%.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 when tested at 30°C and 95% relative humidity for a methyl iodide penetration of:

a. ≤ 2.5% for 2 inch charcoal adsorber beds, or

b. ≤ 0.5% for 4 inch charcoal adsorber beds.

3. Verifying a system flow rate of 2000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 when tested at 30°C and 95% relative humidity for a methyl iodide penetration of:

1. ≤ 2.5% for 2 inch charcoal adsorber beds, or

2. ≤ 0.5% for 4 inch charcoal adsorber beds.

~~d. At least once per 18 months by:~~

~~1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the system at a flow rate of 2000 cfm ± 10%.~~

~~2. Verifying that on a control room high radiation test signal, the system automatically isolates the control room within 10 seconds and switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.~~

~~e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 2000 cfm ± 10%.~~

SURVEILLANCE REQUIREMENTS (continued)

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the system at a flow rate of 2000 cfm ± 10%.

2. Verifying that on a control room high radiation test signal, the system automatically isolates the control room within 10 seconds and switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 2000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 2000 cfm ±10%.

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3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

The OPERABILITY of the control room emergency ventilation and air conditioning system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50.

Unit 1 and Unit 2 control rooms are a single environment for emergency ventilation and air conditioning concerns. Since the control room emergency ventilation and air conditioning equipment is shared between units, the plant status of both units must be considered when determining applicability of the specification.

Due to the unique situation of the shared emergency ventilation and air conditioning equipment, the components may be cross fed from the opposite unit per predetermined contingency actions/procedures. Unit 1 may take credit for operability of these systems when configured to achieve separation and independence regardless of normal power and/or service water configuration. This will be in accordance with pre-determined contingency actions/procedures.

The control room emergency ventilation system consists of two independent filter and fan trains, two independent actuation channels and the Control Room isolation dampers. The control room dampers isolate the control room within 10 seconds of receipt of a high radiation signal.

If the actuation signal can not start the emergency ventilation recirculation fan, operating the affected fan in the manual recirculation mode and isolating the control room isolation dampers provides the required design function of the control room emergency ventilation system to isolate the combined control rooms to ensure that the control rooms will remain habitable for operations personnel during and following accident conditions. This contingency action should be put in place immediately (within 1 hour) to fully satisfy the design functions of the control room emergency ventilation system.

The control room emergency air conditioning system (CREACS) provides temperature control for the control room following isolation of the control room. It is manually started from the Unit 2 Control Room. The CREACS consists of two independent and redundant trains that provide cooling of recirculated control room air. A cooling coil and a water cooled condensing unit are provided for each system to provide suitable temperature conditions in the control room for operating personnel and safety related control equipment.

With both trains of the control room emergency ventilation and/or emergency air conditioning inoperable, the function of the control room emergency air systems have been lost, requiring immediate action to place the ~~reactor~~ unit in a condition where the specification does not apply.

The actions associated with the control room emergency ventilation and air conditioning systems ensure that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected. Fuel handling is suspended if neither train is OPERABLE or if the actions cannot be applied. Suspending fuel handling activities acts to place the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies to a safe position.