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August 10, 2000

2CAN080002

U. S. Nuclear Regulatory Commission
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Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Proposed Technical Specification Changes Deleting The Requirements For The Containment Purge And Exhaust System And Revising The Containment Penetration Requirements Of Specification 3.9.4

Gentlemen:

Attached for your review and approval are proposed changes to the Arkansas Nuclear One – Unit 2 (ANO-2) Technical Specifications (TS). The changes affect ANO-2 Limiting Condition for Operation (LCO) 3.9.4 and its associated bases by proposing the deletion of the operability requirements for the containment purge and exhaust system. By letter dated August 2, 1999, Entergy Operations, Inc. informed the NRC that the ANO-2 containment building purge and exhaust system did not perform a safety function, would be proposed for deletion from the TSs, and, therefore, upgrading the test requirements to the American Society for Testing and Materials (ASTM) D3803-1989, Standard Test Method for Nuclear-Grade Activated Charcoal was not necessary. Future testing of the affected filtration units will be controlled under 10 CFR 50.59 and the ANO-2 filter testing program.

ANO-2 TS 3.9.4 requires that any opening in the containment building be exhausted through an operable High Efficiency Particulate Air (HEPA) and Charcoal filter during core alterations or during the movement of irradiated fuel within the containment building. The containment purge system is prohibited from being placed in operation in Modes 1, 2, 3, or 4 by ANO-2 TS 3.6.1.6 and must be capable of automatic isolation upon receipt of a high radiation signal by ANO-2 TS 3.3.3.1, Table 3.3-6 while in Modes 5 and 6. The system also receives automatic isolation signals from the Engineered Safety Features Actuation System on a Safety Injection Actuation Signal or a Containment Isolation Actuation Signal. Entergy Operations, Inc. has evaluated the purge filtration system under the criteria of 10 CFR 50.36(c)(2)(ii) and has determined that this system is not required to be retained in the TSs. Since the filtration system is not relied upon in any accident analysis and does not meet the requirements for inclusion in the TSs, deleting the operability requirements of TS 3.9.4 associated with the containment purge and exhaust system is acceptable. However, the ANO-2 containment purge and exhaust system filtration units are credited in the ANO-2 safety analyses for long-

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term post accident containment building cleanup to support personnel access. Therefore, changes to the containment purge and exhaust system will remain controlled under 10 CFR 50.59.

In addition to the above request, item (c) of TS 3.9.4 is revised to require containment penetrations to be "capable" of being closed during the handling of irradiated fuel within the containment building. As currently written, the TSs do not allow any penetration to be opened during the handling of irradiated fuel within the containment building unless exhausting through the containment purge and exhaust system or, provided sufficient administrative controls are established, the equipment hatch and/or containment personnel airlocks may be opened. This wording unduly restricts Plant Operations from performing controlled activities such as local leak rate testing and draining the containment sump, both of which require breaching the containment barrier. The proposed revision will allow such openings provided sufficient administrative controls are established to ensure their closure in the event a containment evacuation is required.

The proposed changes have been evaluated in accordance with 10 CFR 50.91(a)(1) using the standards of 10 CFR 50.92(c) and it has been determined that the changes involve no significant hazards considerations. The basis for this determination is included in the attached submittal.

Entergy Operations, Inc. requests prompt NRC review and approval of the proposed changes contained within this submittal with an implementation period of 60 days.

Very truly yours,

CGA/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 Pope County and the State of Arkansas, this 10th day of August, 2000.

Andrea Pierce
Notary Public
My Commission Expires 12/15/07

"OFFICIAL SEAL"
Andrea Pierce
Notary Public, State of Arkansas
County of Pope
My Commission Exp. 12/15/2007

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ATTACHMENT 1

TO

2CAN080002

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 intended to eliminate the unnecessary requirements for the containment purge ventilation filtration units and the unnecessary restrictions on containment penetration closure during the handling of irradiated fuel within the containment building. The following revisions are proposed:

- Limiting Condition for Operation (LCO) 3.9.4(c)(1) is revised to require penetrations other than the equipment hatch and/or the air locks of items (a) and (b) to be "capable" of being closed. In support of this revision, the footnote at the bottom of the page is revised to include administrative controls that must be established when such a penetration is opened. In addition, the examples of methods used to ensure closure is revised to be consistent with that of the Revised Standard Technical Specifications (RSTS) of NUREG-1432.

- Limiting Condition for Operation (LCO) 3.9.4(c)(2) is deleted along with the associated Surveillance Requirement 4.9.4.2 on pages 3/4 9-4 and 3/4 9-5. The deleted text applies only to the operability of the containment purge exhaust filtration units. Page 3/4 9-5 is deleted in its entirety; therefore, the footer at the bottom of page 3/4 9-4 is revised to inform the user that the next TS page is 3/4 9-6. This latter change is administrative in nature and will not be discussed further within the context of this submittal.

- The associated bases for LCO 3.9.4 on page B 3/4 9-1 is revised to delete references to the containment purge exhaust system filtration units and to include discussions relevant to containment penetrations that may be open during the handling of irradiated fuel.

BACKGROUND

Removal of Purge Filtration from the Technical Specifications

ANO-2 TS LCO 3.9.4 contains requirements for the operability of the High Efficiency Particulate Air (HEPA) and Charcoal filter units of the containment purge exhaust treatment system. Detailed information regarding the purge filter units may be referenced in the ANO-2 Safety Analysis Report (SAR) Sections 6.2.3, 9.4.5 and 11.3.6.2. When initially installed, these filter units were intended to support containment ventilation and exhaust functions while minimizing radioactive iodine or particulate releases to the public. However, ANO-2 is not permitted to utilize the containment purge and exhaust system in Modes 1, 2, 3, or 4 since Specification 3.6.1.6 requires the isolation valves for the system to remain closed during these modes of operation. With the requirements of LCO 3.9.4 being applicable only during the movement of fuel within the containment building or during core alterations, the operability of the containment purge exhaust filtration system need only be assessed for Mode 6 conditions since such activities are not performed in Mode 5. This limits the assessment of the filtration system to events such as fuel handling accidents and long-term post accident cleanup of the containment building to support personnel access.

The fuel handling accident in containment, as discussed in ANO-2 Safety Analysis Report (SAR) Section 15.1.23, does not credit the containment purge and exhaust system as a means of filtering a release of radionuclides to the environment. Furthermore, the NRC safety evaluation for Amendment 203 to the ANO-2 Operating License, which granted the ability to leave the containment equipment hatch open during fuel movement, does not take credit for filtration. Because the ANO-2 safety analysis does not credit the containment purge system for ensuring that fuel handling accident dose limits remain well within 10 CFR 100 limits, deletion of the requirements associated with the containment purge and exhaust system filtration units from the TSs is acceptable.

In addition to the above discussion, the containment purge system is designed to automatically shutdown and isolate from the containment building upon receipt of a high radiation signal. The radiation monitor, which acts to isolate the containment purge and exhaust system upon high radiation, is required by ANO-2 TS 3.3.3.1, Table 3.3-6, Item 2(a)(i)(a) during operation in Modes 5 and 6. Therefore, the ventilation path affected by the proposed changes of this submittal is effectively isolated under adverse conditions, which provides additional assurance that operability of the containment purge and exhaust system filtration units is not necessary to limit radioactive releases to the public.

Generic Letter 99-02, Laboratory Testing of Nuclear Grade Activated Charcoal, was issued by the NRC on June 3, 1999, to alert licensees on the requested NRC application of the American Society for Testing and Materials (ASTM) D3803-1989, Standard Test Method for Nuclear-Grade Activated Charcoal, for ventilation systems that are credited for minimizing dose limits to the public. The generic letter contained five specific Requested Actions of licensees. Requested Action #5 of the generic letter requested that licensees who should choose not to perform the NRC desired actions notify the NRC in writing within 60 days of their plans to pursue an alternate approach, the schedule for the alternate approach, and the basis for continued operability. By letter dated August 12, 1999, Entergy Operations, Inc. notified the NRC of their intent to not include the ANO-2 containment purge and exhaust filtration system in the recommended NRC testing program. As discussed above, this decision was based on the fact that the system is not credited in any ANO-2 accident analyses. The aforementioned letter also stated the intent to remove the requirements associated with the ANO-2 purge filtration systems from the respective TSs, as proposed in this submittal.

Status of Containment Penetrations During Movement of Irradiated Fuel

The NRC approved the opening of the equipment hatch and/or personnel air locks in Amendments 203, dated April 16, 1999, to the ANO-2 Operating License, in part, due to the fact that offsite dose consequences were acceptable in this configuration (reference ANO-2 TS Amendment 166, dated September 28, 1995). The evaluation of offsite dose consequences assumed that the containment building was not available to aid in limiting any offsite release should a fuel handling accident occur while the equipment hatch or personnel air locks were opened. Since it has been shown that the offsite dose consequences in this event remain well within the 10 CFR 100 limits, allowing other penetrations to be opened during the handling of irradiated fuel within the containment building is equally acceptable.

However, in approving Amendment 203, the NRC assumed that sufficient administrative controls would be established to ensure containment closure could be achieved during a fuel handling accident as an added safety measure. Therefore, ANO provided substantial information to the NRC, describing the administrative controls already established within shutdown-mode programs. Such controls include the approval of management before opening a penetration, ensuring an individual is designated to close the penetration should a containment evacuation be required, ensuring communications are available between ANO-2 Operations and/or Outage Management and the designated individual, and that the penetration must be capable of being closed within 30 minutes. The latter commitment aids in ensuring containment closure will be accomplished prior to core boiling in the event of a loss of shutdown cooling. The appropriate commitments discussed and agreed to in the above amendment will be included for the proposal of this submittal, which allows other containment penetrations to be opened during the handling of irradiated fuel within containment.

DISCUSSION OF CHANGE

Removal of Purge Filtration from the Technical Specifications

Part (c)(2) of ANO-2 TS LCO 3.9.4 is proposed for deletion since its requirements pertain only to the containment purge and exhaust treatment system. Subsequently, Part (c)(1) of the same specification is incorporated into Part (c). Surveillance requirement 4.9.4.2 is also proposed for deletion since it applies only to the testing of the containment purge and exhaust system filtration units. The applicable TS Bases are also revised to eliminate discussion associated with the containment purge and exhaust system. In order for a structure, system, or component to be governed by the TSs, it must meet one or more of four criteria established in 10 CFR 50.36(c)(2)(ii). The containment purge and exhaust filtration system is not used to assess the integrity of the reactor coolant pressure boundary, is not considered an accident initiator, is not relied upon to mitigate the consequences of an accident, and is not credited for the purpose of protecting the public. As discussed previously, the ANO-2 safety analysis does not credit the containment purge system for ensuring that fuel handling accident dose limits remain well within 10 CFR 100 limits. In addition, during the operation of the containment purge and exhaust system in Modes 5 and 6, the system is automatically isolated upon receipt of a high radiation signal. Therefore, the containment purge and exhaust system components of TS 3.9.4 do not meet the criterion of 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs.

The ANO-2 SAR, however, credits the containment purge and exhaust system as a post accident "cleanup" system. The ANO-2 SAR credits both the filtering capability and limiting the run-time of the containment purge and exhaust system for limiting offsite release for post accident cleanup purposes. Entergy Operations, Inc. intends to continue testing the containment purge and exhaust filtration units on a refueling cycle (presently 18-month) frequency since the units are only used to support refueling operations. Additional testing will be performed if the purge filtration unit exceeds 720 hours of run-time while supporting fuel handling activities. The testing will continue to ensure that the containment purge and exhaust

system filtration units remain available to support post-accident cleanup efforts should they be called upon to do so. Applicable procedures will continue to include discussion of testing requirements to ensure the credit take within the ANO-2 SAR for post-accident cleanup purposes is maintained. Because discussion of the use of the containment purge and exhaust system is included in the ANO-2 SAR, future testing and changes to the containment purge and exhaust filtration units will be controlled under 10 CFR 50.59. Therefore, it is unnecessary to relocate the current TS requirements for the containment purge and exhaust filtration units to the Technical Requirements Manual (TRM). Furthermore, similar filtration units are routinely tested and maintained outside the TSs and TRM, such as the Auxiliary Building ventilation system, the Auxiliary Building Extension ventilation system, and the Post Accident Sampling System ventilation system.

Status of Containment Penetrations During Movement of Irradiated Fuel

ANO-2 also proposes that containment penetrations other than those presently allowed by TSs to be opened during the handling of irradiated fuel. With this provision, administrative controls will be established that will ensure that all penetrations are closed within 30 minutes of the announcement that a containment evacuation is required. Such an allowance will provide Operations with the much-needed flexibility to perform limited functions and tests during fuel handling operations. Under the current TS, the containment sump can not be drained without stopping the handling of irradiated fuel within the containment building, since the draining activity results in a breach of the containment barrier. The proposal will allow this activity and other limited activities, such as local leak rate testing, to be performed without affecting fuel handling activities. Containment penetrations are strictly controlled by safe shutdown programs such as the ANO-2 Shutdown Operations Protection Plan (SOPP) and the Outage Risk Management Guidelines (ORMG). Since an individual must be designated to ensure closure of such penetrations within 30 minutes of the declaration of a containment evacuation, the number of penetrations that would be opened at a given time would be limited, largely due to the availability of personnel. Nevertheless, the aforementioned offsite dose analysis remains unaffected regardless of the number of penetrations that may be opened during a given moment in time since the analysis assumed no "containment" took place during the fuel handling accident event.

The opening of containment penetrations during the handling of irradiated fuel within the containment building is limited to the analysis docketed in ANO-2 Amendment 166, dated September 28, 1995, and is similar in concept to Perry Nuclear Power Plant – Unit 1 Amendment 102, dated March 11, 1999. The most limiting accident in this mode of operation is the fuel handling accident. For ANO-2, containment integrity requirements are not credited for mitigating the consequences of a fuel handling accident. It is assumed, however, that the reactor has been shut down for at least 100 hours, when radiological decay has significantly reduced the fuel fission product inventory. ANO-2 Amendment 203 applied this analysis by allowing the containment equipment hatch and/or the personnel air locks to remain open during the handling of irradiated fuel within the containment building. Given the application of the appropriate restrictions required by ANO-2 Amendment 203, the provision to allow containment penetrations to be "capable" of being closed is acceptable.

The methods for establishing closure of penetrations when required is revised to be consistent with the RSTS. Containment barriers other than piping systems could be breached that are not closed or otherwise sealed by the use of an automatic isolation valve, blind flange, or manual valve. An electrical penetration may be one example where the re-installation and sealing of the steel plate may be determined to be the most rapid and effective means of establishing containment closure. By revising the statement to include "equivalent" methods, the licensee remains responsible for ensuring that the closure method used will provide a temporary atmospheric pressure ventilation barrier as is consistent with the RSTS. Furthermore, the method used must support containment closure within 30 minutes of the decision to evacuate containment, which is consistent with ANO-2 Amendment 203 requirements.

The applicable bases have been revised to delete references to the containment purge and exhaust filtration units and to include discussion relevant to those containment penetrations that may be open during the handling of irradiated fuel within the containment building. The current bases have been improved to provide greater clarity.

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 delete current Mode 5 and 6 requirements associated with the operability of the ANO-2 containment purge and exhaust system. The containment purge and exhaust system is not allowed to be placed in operation in Modes 1, 2, 3, and 4. Furthermore, the containment purge and exhaust system is required to isolate upon receipt of a high radiation signal. The filtration system associated with the containment purge and exhaust fan is not credited in any ANO-2 safety analysis in limiting the offsite dose consequences during an accident. The ANO-2 Safety Analysis Report (SAR) credits the containment purge and exhaust system for support of long-term post accident cleanup of the containment building only. Since post accident containment building cleanup is not a safety function and has no time constraints, offsite dose consequences may be effectively controlled by limiting the run-time of the containment purge system. Credit may be taken for the filtration capability of the system to additionally support reductions in offsite dose consequences during post accident cleanup efforts since the effectiveness of the filters is tested when the filter run-time exceeds 720 hours (in support of fuel handling activites) or on a refueling cycle (currently 18-month) frequency, whichever is most limiting. Finally, the containment purge and exhaust system components of TS 3.9.4 do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs. Therefore, deletion of the operability requirements associated with the containment purge and exhaust system of TS 3.9.4 is acceptable.

In addition, ANO-2 proposes that containment penetrations be "capable" of being closed during the handling of irradiated fuel within the containment building. This allowance will ease the current restrictions that prevent standard operational functions and tests from being

completed during fuel handling activities. An example of such a function is the draining of the containment sump, which results in a temporary breach of the containment barrier and is regulated by a control room operator. NRC-approved Amendment 203 to the ANO-2 Operating License provided justification for the opening of similar penetrations by providing information and reference documents that illustrated that offsite dose consequences would remain well within 10 CFR 100 limits during a fuel handling accident, while assuming that no "containment" took place to aid in release mitigation. However, administrative controls were required to support the approval of the above amendment as an added measure of safety. Provided the same administrative controls required under ANO-2 TS Amendment 203 are established for the penetrations associated with this proposal, ANO-2 believes this revision is acceptable.

An evaluation of the proposed changes 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 containment purge and exhaust system is not considered an accident initiator nor do the proposed changes result in any physical change to the plant design. Therefore the probability of an accident previously analyzed remains unchanged. In addition, the containment purge and exhaust system filtration units are not credited in the ANO-2 safety analysis in limiting offsite dose consequences during an accident. Furthermore, the system is designed to automatically isolate, as required by ANO-2 TS 3.3.3.1, Table 3.3-6 upon receipt of a high radiation signal when in operation in Modes 5 and 6. Since the containment purge and exhaust system is credited only for long-term post accident cleanup efforts and will continue to be tested to ensure the filtration system remains effective in supporting such efforts, the consequences of an accident previously evaluated remains unchanged.

The opening of a containment penetration during the handling of irradiated fuel within the containment building is limited to Mode 6 with the core flooded to refueling level ($\geq$ 23 feet of borated water above the fuel) by the applicability of TS 3.9.4. Such openings are strictly controlled by safe shutdown programs such as the ANO-2 Shutdown Operations Protection Plan (SOPP) and the Outage Risk Management Guidelines (ORMG). A containment penetration being open during the handling of irradiated fuel does not result in an increase in the probability of an accident that has been previously evaluated.

ANO submitted the radiological dose consequences of a fuel handling accident within the containment building to the NRC, illustrating that without a containment building, the offsite dose consequences due to a fuel handling accident inside containment

would remain well within 10 CFR 100 limits. This evaluation was approved by the NRC in Amendment 166 to the ANO-2 Operating License and referenced in the aforementioned Amendment 203 to the ANO-2 Operating License in support of allowing the equipment hatch and/or personnel air locks to remain open during fuel handling activities. Since the above evaluation assumes no credit for "containment" and subsequently illustrates that the resulting offsite dose consequences are acceptable, the consequences of an accident previously evaluated are not adversely impacted.

The proposed revision of penetration closure methods does not impact any accident previously analyzed or impact the consequences of such an accident. The licensee will continue to be accountable for ensuring adequate and timely closure of each containment penetration should such closure become necessary. Revising the examples given in the TSs for establishing closure is, therefore, considered risk-neutral and is consistent with the Revised Standard Technical Specifications (RSTS) of NUREG-1432.

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 containment purge and exhaust system filtration units are not credited in the ANO-2 safety analysis in limiting offsite dose consequences during an accident. Furthermore, the system is designed to automatically isolate, as required by ANO-2 TS 3.3.3.1, Table 3.3-6, upon receipt of a high radiation signal when in operation in Modes 5 and 6. Since the containment purge and exhaust system is credited only for long-term post accident cleanup efforts and will continue to be tested to ensure the filtration system remains effective in supporting such efforts, the possibility of a new or different kind of accident being created from that previously evaluated remains unchanged.

The fuel handling accident has previously been addressed in the ANO-2 safety analysis. In addition, the offsite dose consequences of the fuel handling accident have been found to be acceptable while assuming no credit for containment. Therefore, the provision to allow penetrations to be opened during the handling of irradiated fuel within the containment building does not create the possibility of a new or different kind of accident from any previously evaluated. The proposed revision of penetration closure methods is also not considered an accident initiator. As an added measure of safety, however, the appropriate administrative controls required by Amendment 203 to the ANO-2 Operating License will be applicable to the containment penetrations impacted by the relevant proposals of this submittal.

Therefore, the proposed changes do 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 containment purge and exhaust system is not presently permitted to be placed in operation in Modes 1, 2, 3, or 4 and thus eliminates one possible path for radiological release to the public. The automatic actuations discussed above that act to isolate the system during emergency events in Modes 5 and 6 also provide assurance that a radiological release will not occur via the containment purge and exhaust system flow paths. Furthermore, the containment purge and exhaust system filtration units are not credited in the ANO-2 safety analysis in limiting offsite dose consequences during an accident. Since the containment purge and exhaust system is credited only for long-term post accident cleanup efforts and will continue to be tested to ensure the filtration system remains effective in supporting such efforts, the margin to safety remains unchanged.

ANO-2 has provided sufficient information to illustrate that the offsite dose consequences, as a result of a fuel handling accident, remain well within 10 CFR 100 limits, while assuming no credit for containment for release mitigation. Since no increase in the offsite dose potential is evident due to the opening of containment penetrations, the margin to safety is not adversely affected by this proposed revision.

The proposed revision of penetration closure methods does not impact the margin to safety. The licensee will continue to be accountable for ensuring adequate and timely closure of each containment penetration should such closure become necessary.

Therefore, the proposed changes do 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, the proposed license amendment 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

REFUELING OPERATIONS

CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door is capable* of being closed,

b. A minimum of one door in each airlock is capable* of being closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be capable* of being closed by a manual or automatic valve, blind flange, or equivalent.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Each of the above required containment penetrations shall be determined to be in its above required conditions within 72 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment.

* Administrative controls shall ensure that appropriate personnel are aware that when containment penetrations, including both personnel airlock doors and/or the equipment door are open, a specific individual(s) is designated and available to close the penetration following a required evacuation of containment, and any obstruction(s) (e.g., cables and hoses) that could prevent closure of an airlock door and/or the equipment door be capable of being quickly removed.

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short-lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

The minimum requirement for reactor subcriticality prior to movement of more than 70 irradiated fuel assemblies to the spent fuel pool ensures that sufficient time has elapsed to allow radioactive decay of the short-lived fission products such that the heat generated will not exceed the cooling capacity of the spent fuel pool cooling system. This decay time and total assembly limitation is conservatively within the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT PENETRATIONS

The requirements on containment penetration closure ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

Containment penetrations, the personnel airlock doors, and/or the equipment door may be open during movement of irradiated fuel in the containment and during CORE ALTERATIONS provided a minimum of one closure method (manual or automatic valve, blind flange, or equivalent) in each penetration, one door in each airlock, and the equipment door are capable of being closed in the event of a fuel handling accident. This allowance assumes that 23 feet of water is maintained above the fuel seated within the reactor vessel to ensure any offsite dose consequence remains within 10 CFR 100 limits in the event of a fuel handling accident. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary atmospheric pressure ventilation barrier. For closure, the equipment door will be held in place by a minimum of four bolts.

MARKUP OF CURRENT ANO-2 TECHNICAL SPECIFICATIONS

(FOR INFO ONLY)

REFUELING OPERATIONS

CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door is capable* of being closed,

b. A minimum of one door in each airlock is capable* of being closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be capable* of being closed by a manual or automatic valve, blind flange, or equivalent. ~~either:~~

~~1. Closed by an isolation valve, blind flange, or manual valve, or.~~

~~2. Exhausting through OPERABLE containment purge and exhaust system HEPA filters and charcoal adsorbers.~~

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Each of the above required containment penetrations shall be determined to be in its above required conditions within 72 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment.

~~4.9.4.2 The containment purge and exhaust system shall be demonstrated OPERABLE at the following frequencies:~~

~~a. 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:~~

* Administrative controls shall ensure that appropriate personnel are aware that when containment penetrations, including both personnel airlock doors and/or the equipment door are open, a specific individual(s) is designated and available to close the penetration~~an airlock door and the equipment door~~ following a required evacuation of containment, and any obstruction(s) (e.g., cables and hoses) that could prevent closure of an airlock door and/or the equipment door be capable of being quickly removed.

1. Verifying that the system satisfies the inplace 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 39,700 cfm ± 10%.

2. Verifying within 31 days after removal that 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 Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.

3. Verifying a system flow rate of 39,700 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

b. 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 C6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.

c. At least once per 18 months by 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 39,700 cfm ± 10%.

d. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 39,700 cfm ± 10%.

e. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal absorbers 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 39,700 cfm ± 10%.

3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short-lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

The minimum requirement for reactor subcriticality prior to movement of more than 70 irradiated fuel assemblies to the spent fuel pool ensures that sufficient time has elapsed to allow radioactive decay of the short-lived fission products such that the heat generated will not exceed the cooling capacity of the spent fuel pool cooling system. This decay time and total assembly limitation is conservatively within the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT PENETRATIONS

The requirements on containment penetration closure ~~and OPERABILITY of the containment purge and exhaust system HEPA filters and charcoal adsorbers~~ ensure that a release of radioactive material within containment will be restricted from leakage to the environment ~~or filtered through the HEPA filters and charcoal adsorbers prior to discharge to the atmosphere~~. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE. ~~Operation of the containment purge and exhaust system HEPA filters and charcoal adsorbers and the resulting iodine removal capacity are consistent with the assumptions of the accident analyses.~~

~~The c~~Containment penetrations, the personnel airlock doors, and/or the equipment door may be open during movement of irradiated fuel in the containment and during CORE ALTERATIONS provided a minimum of one closure method (manual or automatic valve, blind flange, or equivalent) in each penetration, one door in ~~the~~ each airlock, and the equipment door are capable of being closed in the event of a fuel handling accident. This allowance assumes that ~~and the plant is in MODE 6 with~~ 23 feet of water is maintained above the fuel seated within the reactor ~~pressure~~ vessel to ensure any offsite dose consequence remains within 10 CFR 100 limits in the event of. ~~Should~~ a fuel handling accident ~~occur inside containment, a minimum of one personnel airlock door and the equipment door will be closed following an evacuation of containment~~. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary atmospheric pressure ventilation barrier. For closure, the equipment door will be held in place by a minimum of four bolts.