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FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

This Document contains 3 Pages.

Document No. ER002888E201Rev./Change No. 0

Title

T-Alt Evaluation for Work Plan 2409.702 (Unit 2 Copper Removal Soak)

Brief description of proposed change:

In an effort to minimize the copper transport from the secondary plant to the S/G's and to reduce the plants CPI, ammonium hydroxide will be added to the condenser. Plant modifications made prior to 2R14 and planned 2R14 modifications have removed the major sources of copper. Over the years of operation, copper from these components have plated out on the secondary piping. The addition of ammonium hydroxide will aid in stripping some of the copper off the piping. The required valve manipulations required for the chemical addition will be a temporary alteration controlled by Work Plan 2409.702. This ER evaluates the valve manipulations associated with WP 2409.702.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Operating License?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Confirmatory Orders?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Core Operating Limits Report?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Fire Hazards Analysis?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Bases of the Technical Specifications?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Technical Requirements Manual?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
NRC Safety Evaluation Reports?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)

Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAPM?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
E-Plan?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

8. Does this review depend on future NRC approval of other actions?
(NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9)

Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

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Basis for Determination (Questions 1, 2, & 3):

1. Neither the Condenser Vacuum nor the Secondary Chemical Addition is mentioned in the Operating License.
2. The removal of the tubing cap upstream of 2CS-74 will make the Unit 2 SAR Figure incorrect. No other SAR documents are affected by this temporary alteration.
3. This is not a test or experiment as described in OP 1000.131

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____. (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

Document Section
LRS: Unit 2 50.59 ("condenser", "ammonia")

MANUAL SECTIONS: Unit 2 SAR Section 10.4.1

FIGURES: Unit 2 SAR Figure 10.4-3

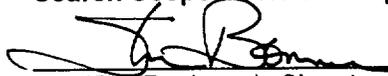
	John Harvey	9/14/00
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 12/11/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
N/A		

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	Steve Bonner	9/14/00
Certified Reviewer's Signature	Printed Name	Date

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER002888E201 Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

FORM TITLE:

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1000.131B

REV.

003-04-0

This Document contains 2 Pages.

Document No. ER002888E201Rev./Change No. 010CFR50.59 Eval. No. FFW#00-107

(Assigned by PSC)

Title T-Alt Evaluation for Work Plan 2409.702 (Unit 2 Copper Removal Soak)

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

The Work Plan requires that reactor power be 0%. A review of the Chapter 15 Accident Analysis reveals that the only feasible event is a Loss of Condenser Vacuum. Past experience has shown that removing the tubing cap upstream of 2CS-74 and drawing air into the condenser has minimal effect on condenser vacuum. With the Turbine Generator off-line, condenser vacuum will be a maximum and a slight degradation of the vacuum will not result in the loss of condenser vacuum. Based on this the probability of an accident previously evaluated in the SAR will not be increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

A loss of condenser vacuum will result in a turbine trip and loss of the main steam dumps to condenser. The area of the alteration contains no equipment other than that used in the maintenance of condenser vacuum. The work plan does not change the effect of a loss of condenser vacuum accident. The consequences of this event as stated in the SAR will not be changed. Therefore, no increase of off-site or on-site dose above that previously evaluated will be generated by this alteration.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The maintenance of condenser vacuum helps mitigate the consequences of certain accidents by allowing main steam to be dumped to the condenser vice the atmosphere. Past experience has shown that the removal of the tubing cap has minimal affect on condenser vacuum at full turbine load. This work plan requires that reactor power be 0%. Based on this the alteration will have insignificant effect on the ability to maintain condenser vacuum. The area in which the alteration will occur has no other equipment important to safety. Based on this, the probability of a malfunction of equipment important to safety will not be increased.

4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The area of the alteration has no equipment important to safety other than the condenser. A loss of condenser has been evaluated and the consequences associated with that accident will remain unchanged as a result of this alteration. The off-site and on-site dose will remain the same as evaluated for a loss of condenser vacuum event.

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5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

Yes No

The only result of a complete failure of this alteration would be a slight degradation of condenser vacuum. There are no other accident initiators in the immediate vicinity of the alteration. Therefore, the only accident that could occur from this alteration is a Loss of Condenser Vacuum. This accident is evaluated in the SAR.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

Yes No

No equipment important to safety other than the condenser is present in the vicinity of the alteration. A loss of condenser vacuum has been previously evaluated in the SAR.

7. Will the margin of safety as defined in the basis for any technical specification be reduced?

Yes No

The maintenance of condenser vacuum is not discussed in the Technical Specification basis. The margin of safety as defined by these basis will not be affected by this alteration.

[Signature]
Certified Reviewer's Signature

John HARVEY
Printed Name

9/14/00
Date

Reviewer's certification expiration date: 12/11/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____

PSC review by: [Signature]

Date: 9/15/00

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Document No. ER002891E201Rev./Change No. 0

Title

T-Alt Evaluation for OP 2106.002 to connect IA to Generator Gas for Purging and Testing

Brief description of proposed change:

When it is desired to remove the hydrogen from the generator, it is first purged with CO₂ then the CO₂ may be purged out with air. Since Instrument Air (IA) is used as the air supply for this operation, a T-Alt configuration is generated when a hose is connected between the IA system and the Generator Gas (GG) system. Additionally, following maintenance IA is used to perform a leak rate test on the generator.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Operating License?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Confirmatory Orders?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Core Operating Limits Report?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Fire Hazards Analysis?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Bases of the Technical Specifications?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Technical Requirements Manual?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
NRC Safety Evaluation Reports?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAPM?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
E-Plan?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Basis for Determination (Questions 1, 2, & 3):

- 1. The Instrument Air System and Generator Gas is below the scope of the Operating License.
- 2. SAR Figure 9.3-1 shows 2IA-5018 Shut. Procedure will connect hose between this valve and 2GG-17 and open valves. No other SAR documents impacted.
- 3. This is not a test or experiment as described in OP 1000.131.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # ____ (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.

Document Section

LRS: Unit 2 50.59 ("Instrument Air" "Generator w/5 Gas")

MANUAL SECTIONS: Unit 2 SAR Section 7.4, 9.3, and 15

FIGURES: Unit 2 SAR Figure 9.3-1

	John Harvey	9/13/00
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 12/11/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
N/A		
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	Steve Bonner	9/13/00
Certified Reviewer's Signature	Printed Name	Date

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ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER002891E201Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

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10CFR50.59 SAFETY EVALUATION

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003-04-0

This Document contains 2 Pages.

Document No. ER002891E201Rev./Change No. 0

10CFR50.59 Eval. No.

FFN# 00-102

(Assigned by PSC)

Title T-Alt Evaluation for OP 2106.002 to connect IA to Generator Gas for Purging and Testing

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

A review of the accident analysis showed that the only feasible accident that could be affected is Loss of Instrument Air System. The only change that would affect the probability of this accident is the use of an air hose to direct Instrument Air to the Generator Gas system. The air hose and fittings are rated for the expected instrument air pressures. The location of the hoses and connections are in an extremely low traffic area. Based on these facts, an increase from one category to the next higher category will not occur. Due to the ratings of the hoses and connections and location of these connections, no significant change within a category is expected. Therefore, the probability of an accident previously evaluated in the SAR will not be increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

The only accident to consider is a Loss of Instrument Air System. This accident is in the SAR Accident Analysis. This accident assumes a complete loss of instrument air. Although this procedurally controlled temporary alteration is not expected to result in an accident, it is bounded by this accident should it occur.

SAR Section 15.1.34.3 states, "Failure of the instrument air system will not prevent the safe shutdown of the plant and will not allow uncontrolled release of radioactivity to the environment."

The consequences of an accident previously evaluated in the SAR will not be increased.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The turbine generator is required to be off-line for the evaluated conditions. The only accident that could be caused by this alteration is a Loss of Instrument Air. As discussed in the SAR accident analysis, this accident will not prevent the safe shutdown of the plant. The plant could be on shutdown cooling during these evolutions, procedurally the shutdown cooling system is aligned to minimize the effect of loss of instrument air. There is no equipment that is important to safety in the immediate vicinity of the air hose and connections. Based on this, the probability of a malfunction of equipment important to safety will not be increased.

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4. Will the consequences of a malfunction of equipment important to safety be increased?

Yes No

Since the alteration is in an area where there is no equipment important to safety, a failure of the fittings or hose will not fall or hit any component important to safety. A failure of the connection or hose could lead to the loss of instrument air that does supply control air to valves and components that are important to safety. These components are design to assume a safe position upon loss of instrument air. The SAR states that a "Failure of the instrument air system will not prevent the safe shutdown of the plant and will not allow uncontrolled release of radioactivity to the environment." The consequences of a malfunction of equipment important to safety will not be increased.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

Yes No

The connection of an air hose between Instrument Air and the Generator Gas system can affect only the Instrument Air system, Generator Gas, and equipment in the immediate vicinity of the connections. The connections are approximately 10 feet from each, the effected section of Generator Gas System in this area is isolated from the generator gases, and no other significant plant equipment is located in the immediate area. Based on this, the only accident would be a Loss of Instrument Air. This accident is evaluated in SAR. The possibility of an accident of a different type than previously evaluated in the SAR will not be created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

Yes No

The area of the connections contains no equipment important to safety. The most severe failure would be a rupture of the air hose which could result in a loss of instrument air system. This accident is evaluated in SAR Section 15.1.34. The possibility of a malfunction of equipment important to safety of a different type than previously evaluated in the SAR will not be created.

7. Will the margin of safety as defined in the basis for any technical specification be reduced?

Yes No

The components effected by this temporary alteration are not described in the Technical Specification basis. Therefore the margin to safety as defined in the basis for technical specification will not be reduced.


Certified Reviewer's Signature

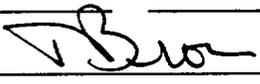
John Harvey
Printed Name

9/13/00
Date

Reviewer's certification expiration date: 12/11/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

PSC review by: 

Date: 9/14/00

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This Document contains 3 Pages.

Document No. **ER002913E201**

Rev./Change No. 0

Title **Valve Equivalency for 2FS-3216A (for Grinnell A-4 Multimatic)**

Brief description of proposed change: **Changing a 1/2" plug valve out to a 1/2" ball valve.**

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete the Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7:
 - QAPM? Yes No
 - E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

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Basis for Determination (Questions 1, 2 & 3):

1) The operating license documents discuss the fire system in general, what it is required to protect, and some functional requirements. The operating license documents do not discuss in detail any of the sub-components of any of the fire system components therefore the change as described would not be included in the operating license documents. 2) The SAR documents cover the fire systems and components in some detail but are mostly from the view point of functionality. Actual sub-components are not discussed. The valve in question is however shown as a plug valve by symbol only on the P&ID drawing M-2219 sheet 4 (SAR fig 9.5-1) Detail H. This will require a figure update to add a note "2" to indicate 2FS-3216A is a ball valve. 3) The change does not involve a test or experiment.

Proposed change does not require 10 CFR 50.59 Evaluation per Attachment 1, Item # _____, (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in Question 1, 2 and 3. If a search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS: _____	
50.59 Unit 2	(multimatic), (2FS*3216*), (*3216*), (grinnell), (fire system), (electrical penetration room), (ball valve w/10 fire), (plug valve w/10 fire), (plug w/10 fire), (ball w/10 fire), (a-4), (upper south), (M*2219)

MANUAL SECTIONS:

SAR 3.1, 9.5, TABLE 9.5-1, Appendix 9A,B,D, and Fire Hazards Analysis

FIGURES:

SAR 9.5-1, 9.5-2, 9.5-3, 9.5-4, 9.5-5

<u>Jeffery A. Curry</u>	<u>Jeff Curry</u>	<u>9/22/00</u>
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 4/29/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
<u>Terry J Bartholomew</u>	<u>Initial preparation</u>	<u>9/18/00</u>

Search Scope Review Acceptability (NA, if performed by Technical Review per 1000.006)

<u>William E. Rogers</u>	<u>WILLIAM E. ROGERS</u>	<u>9/25/00</u>
Certified Reviewer's Signature	Printed Name	Date

ARKANSAS NUCLEAR ONE

FORM TITLE:

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ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)

Document No. ER002913E201

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Complete the following Determination. If the answer to any checklist item is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.

Increase thermal discharges to lake or atmosphere?

Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?

Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?

Modify the design or operation of cooling tower which will change drift characteristics?

Install any new transmission lines leading offsite?

Change the design or operation of the intake or discharge structures?

Discharges any chemicals new or different from that previously discharged?

Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?

Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?

Involve incineration or disposal of any potentially hazardous materials on the ANO site?

Result in a change to nonradiological effluents or licensed reactor power level?

Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

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003-04-0

This Document contains 2 Pages.

10CFR50.59 Eval. No. FFN#00-113

(Assigned by PSC)

Document No. ER002913E201

Rev./Change No. 0

Title Valve Equivalency for 2FS-3216A

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- 1. Will the probability of an accident previously evaluated in the SAR be increased?

Yes No

The valve in question is part of the test trim for a sprinkler system control valve, which is part of the overall Fire Protection System (FPS). The FPS is not a contributor to any of the accident scenarios as described in the Unit 2 SAR Chapter 15 and per Section 9.5 the FPS is specifically designed so that pipe rupture or inadvertent operation does not cause loss of function of any component/system important to safety. The change of the plug valve to a ball valve would not increase the probability even if it did effect an accident scenario. Since the valve does not effect system performance, change system function, change operation of the system, does not effect other systems, operates/looks the same, and does not change system pressures the probability of an accident that is evaluated will not be increased.

- 2. Will the consequences of an accident previously evaluated in the SAR be increased?

Yes No

The valve change will not increase the consequences of any accident since the valve's function is to provide testing capabilities of the pressure alarm switch for fire valve 2UAV-3216 and does not effect the function or capabilities the FPS which in turn does not effect any important to safety equipment whether activated or not. As a result the accident analysis radiation dose will not increase.

- 3. Will the probability of a malfunction of equipment important to safety be increased?

Yes No

The valve change does not effect the operability of this FPS (Fire Zone 144-D). This valve could be open or closed or missing and the operability of this system would not be effected. If of course the valve was missing or leaked there would be spillage of water on the floor if the system were actuated, however the spillage would be minimal due to an orifice and the small size of the piping. The valve is located in a hallway with no nearby safety related equipment. The valve is UL/FM approved therefore the system will maintain its UL/FM status. As a result, the valve change would not increase the probability of malfunction of important to safety equipment.

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4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The valve change does not effect the operability or function of the FPS in which the valve is installed. Since the FPS is not effected, the consequences of a malfunction will not be increased and there is no increase in an accident analysis radiation dose.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

The changing of the valve does not effect the function of the system it is installed in and the replacement valve operates the same as the original and essentially looks the same as the original (no change in operator error rate). Since no operating or functional characteristic of any system has been changed or effected, an accident of a different type than previously evaluated in the SAR would not be created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

The changing of the valve does not change the function of the FPS in which it is installed nor does it introduce any new or additional failure mechanisms into the system. The replacement valve functions the same as the original valve and meets or exceeds the pressure and UL/FM Listing of the original valve. A different type of malfunction would not be created.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

The FPS is not addressed in the basis of any of the technical specifications. None of the characteristics of the FPS in which this valve is installed are changed by the replacement valve, and the characteristics of the replacement valve are equal to or greater than the existing valve, therefore the change would not reduce any margin of safety if any margin of safety or safety related equipment was effected by the FSP.


Jeff Curry
9/22/00
 Certified Reviewer's Signature Printed Name Date

Reviewer's certification expiration date: 4/29/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
Terry J Bartholomew	Prepared	9/18/00

PSC review by: R. Fulla Date: 9-28-00

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3/2/03

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This Document contains 3 Pages.

Document No. ER002947E201

Rev./Change No. 0

Title Installation of temp filter over 2VEF-15 roughing filter

Brief description of proposed change: Installs temporary filter medium over installed roughing filter. This is required to preserve the installed filter until replacement filters can be obtained.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No

3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No

4. Result in a potential impact to the environment? (Complete the Environmental Impact Determination of this form.) Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7:
 - QAPM? Yes No
 - E-Plan? Yes No

8. Does this review depend on future NRC approval of other actions (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

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Document No. **ER002947E201**

Rev./Change No. **0**

Basis for Determination (Questions 1, 2 & 3):

Question 1: The operational requirements of the Unit 2 Containment Purge System will still be met after the installation of the temp filter medium. The existing filter will remain in place. Therefore, no changes to the Operating License will be required.

Question 2: The roughing filter is described in the Unit 2 SAR in Section 9.4.5.2. The filters for the Containment Purge System are also listed in Section 12.2.2. The proposed temp filter medium is not described and therefore, its installation would make the Unit 2 SAR less accurate.

Question 3: Installation of the temporary filter medium does not meet the definitions of test or experiment in OP-1000.131.

Proposed change does not require 10 CFR 50.59 Evaluation per Attachment 1, Item #____, (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in Question 1, 2 and 3. If a search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS: U2 50.59	"containment w/10 purge", "2VEF-15", "2VFP-3"

MANUAL SECTIONS: U2 SAR	Table 3.2-2 "Seismic Categories of SCS", Section 9.4.5 "Containment Building", Section 12.2 "Ventilation"
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FIGURES: U2 SAR	Figure 9.4-6 (M2261 Sheet 1) "Air Flow and Control Diagram HVAC Containment Building"
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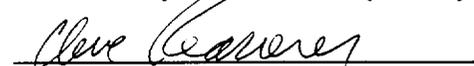
 Certified Reviewer's Signature	Steve Bonner Printed Name	9/26/00 Date
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Reviewer's certification expiration date: 8/3/01

Assistance provided by:

Printed Name N/A	Scope of Assistance	Date
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Search Scope Review Acceptability (NA, if performed by Technical Review per 1000.006)

 Certified Reviewer's Signature	Cleveland Reasoner Printed Name	9/26/00 Date
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12-17-13

ARKANSAS NUCLEAR ONE

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)

Document No. ER002947E201

Rev./Change No. 0

Complete the following Determination. If the answer to any checklist item is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

13-12-15

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This Document contains 2 Pages.

FFN
10CFR50.59 Eval. No. 00-110
(Assigned by PSC)

Document No. **ER002947E201**

Rev./Change No. **0**

Title **Installation of temp filter over 2VEF-15 roughing filter**

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

The Containment Purge System is not an accident initiator and additional filter medium in the unit will not affect the operation of the fan. The operational limits of the Containment Purge System, including the allowed differential pressure across the filters will be maintained. Therefore, the probability of a previously evaluated accident will not be increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

The Containment Purge System isolates automatically when radiation is detected in the duct. The temp filter medium will have no affect on the system's ability to isolate. Therefore, the radiological consequence of all accidents evaluated that could release radiation into the Containment Building during purge operations or when the system is supplying ventilation for the Containment Building will be unchanged.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The temp filter medium will be contained in the fan housing upstream of the installed roughing filter. The medium will not be able to migrate to any other location. The temp filter will in effect increase the filtering capability of the roughing filter that is installed. The only affect will be to raise the initial differential pressure after installation. However, the required flow for the purge system will be maintained. The installed filter is replaced when the differential pressure affects fan flow. The temp filter medium will be replaced instead when differential pressure affects fan flow. The roughing filter is not safety-related. The safety related function is to isolate when radiation is detected. The temp filter medium will not affect that function. Therefore, the probability of malfunction of the equipment important to safety will not be increased.

4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The radiological consequence of failure of the Containment Purge System to isolate will be not increase due to the installation of the temp filter medium. The additional filtering could potentially decrease the radiological consequences.

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5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

The temp filter medium will be located in the filter housing upstream of the installed roughing filter, HEPA filter bank and Carbon Filter. The temp filter medium is similar to the roughing filter medium and does not pose a fire threat or significant increase any seismic loading. The installation of the temp filter medium does not affect the operation of the Containment Purge System. Therefore, the possibility of a different accident type is not created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

The roughing filter is not safety-related or seismic class 1. The fan and filter housing is downstream of the safety-related isolation equipment. The differential pressure across the temp filter medium and the roughing filter will be maintained within the operational requirements of the roughing filter. The additional filter medium can not affect the system in any new way that is not already present with the installed roughing filter. Therefore, the possibility of a malfunction of equipment important to safety of a different type will not be created by installing the temp filter medium.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

The isolation function of the Containment Purge System will be unchanged by the installation of the temp filter medium. The Containment Purge system has no affect on the Fuel Cladding or RCS Boundry. Therefore, the installation of the temp filter medium will not reduce the margin of safety in the bases of the tech specs.



Certified Reviewer's Signature

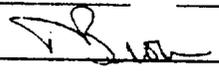
Steve Bonner
Printed Name

9/26/00
Date

Reviewer's certification expiration date: 8/3/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
N/A		

PSC review by:  Date: 9/26/00

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This Document contains 4 Pages.

Document No. ER002950E201 Rev./Change No. 0

Title Removing 2PSV-5602 and 2PSV-5603 from service (2BS-5602 & 2BS-5603 closed on M-2236 sht. 1)

Brief description of proposed change:

ER002950E201 provides the necessary engineering documentation to isolate 2PSV-5602 and 2PSV-5603 respectively from the ECCS sump suction MOVs located outside containment. This ER justifies changing P&ID M-2236 sht. 1 to show 2BS-5602 and 2BS-5603 closed. The MOVs (2CV5649-1 and 2CV-5650-2) were identified as potentially susceptible to pressure locking (CR-2-95-0116), but have since been determined to be operable. The relief valves were added to the MOVs by ANO (LCP 95-6011) to provide additional margin.

The relief valves have experienced numerous operational failures and are considered a safety concern. The relief valves have been isolated for maintenance in the past under the existing operability position. Reviews of the original engineering calculations show that the MOVs continue to be operable without the relief valves installed. Closing 2BS-5602 and 2BS-5603 isolates the relief valves and will remove a possible path for post-accident sump inventory leakage to the auxiliary building. This configuration change does not change the design basis of the parent SSC (2CV-5649-1 & 2CV-5650-2).

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No

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Document No. ER002950E201 Rev./Change No. Ø

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
- QAPM? Yes No
- E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

Basis for Determination (Questions 1, 2, & 3):

- A search of the licensing bases documents did not identify any changes. The relief valves and manual isolation valves are beyond the level of detail of those documents.
- The only document identified by the search that listed the valves or impact to the valve was SAR figure 6.2-17. Operation and design bases of this valve were not specifically discussed by any of the documents listed in question 2.
- The guidance in attachment 2 was reviewed. Changing the state of the manual valves to isolate the relief valves does not constitute a test or experiment

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____, (if checked, note appropriate item #, send LDCR to Licensing).

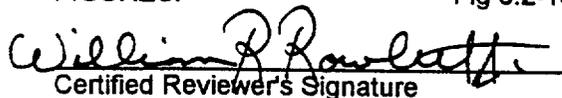
Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS: ANO-2 50.59	(2BS5602*) (2BS5603*) (2CV5649*) (2CV5650*) (2PSV5602*) (2PSV5603*) (pressure w/10 locking) (thermal w/10 binding) (ECCS w/10 suction) (sump w/10 valve) (double isolation) (penetration w/10 pressure) (RAS w/10 pressure) (LCP 95-6011) (second boundary) (recirculation actuation system) (ESAS) (Hub)

MANUAL SECTIONS: Chapter 15; Table 15.1.13-5

FIGURES: Fig 6.2-15


Certified Reviewer's Signature

William R. Rowlett, Jr.
Printed Name

11/02/2000
Date

Reviewer's certification expiration date: 05/25/2001

FORM TITLE:	10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0
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Document No. ER002950E201 Rev./Change No. Ø

Assistance provided by:

Printed Name	Scope of Assistance	Date
Keith Perkins	Search assistance	09/25/2000

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

<u>John Richardson</u> Certified Reviewer's Signature	<u>John Richardson</u> Printed Name	<u>11-7-2000</u> Date
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FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

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003-04-0

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Document No. ER002950E201

Rev./Change No. Ø

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

This Document contains 1 Page.

Document No. ER002950E201 Rev./Change No. 0 10CFR50.59 Eval. No. PEN-01-03E
 (Assigned by PSC)

Title Removing 2PSV-5602 and 2PSV-5603 from service (2BS-5602 & 2BS-5603 closed on M-2236 sht. 1)

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- | | | |
|--|------------------------------|--|
| 1. Will the probability of an accident previously evaluated in the SAR be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 2. Will the consequences of an accident previously evaluated in the SAR be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 3. Will the probability of a malfunction of equipment important to safety be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 4. Will the consequences of a malfunction of equipment important to safety be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 7. Will the margin of safety as defined in the basis for any technical specification be reduced? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |

	William R. Rowlett, Jr.	11/01/2000
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 05/25/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
Keith Perkins	Research	09/25/2000

PSC review by:  Date: 6/7/01

Question 1

Will the probability of an accident previously evaluated in the SAR be increased?

The answer is no.

Failures of 2PSV-5602, 2PSV-5603, 2BS-5602 or 2BS-5603 are not accident initiators in the SAR regardless of valve position. Since they are not accident initiators they do not contribute to the probability of an accident. Therefore, changing the position of these valves or isolating them does not increase the probability of an accident in the SAR.

Question 2

Will the consequences of an accident previously evaluated in the SAR be increased?

The answer is no.

Engineering calculation 95-E-0041-04 shows that the ECCS suction MOVs from the containment sump, 2CV-5649-1 and 2CV-5650-2, do not require bonnet relief valves to protect the MOVs against pressure locking. The calculation shows that the MOVs will perform their intended function under worst case conditions without the relief valves in service. Since the MOVs are capable of performing their specified safety function, the consequences of accidents are not increased. Since the relief valves will be isolated from the post accident containment sump, the possibility of relief valve failure increasing accident consequences is eliminated.

Question 3

Will the probability of a malfunction of equipment important to safety be increased?

The answer is no.

Per calculation 95-E-0041-04, the ECCS suction MOVs from the containment sump, 2CV-5649-1 and 2CV-5650-2, do not require bonnet relief valves to protect the MOVs against pressure locking. The calculation shows that the MOVs are operable in worst case conditions without the relief valves. The change does not impact the mechanical or electrical operation of the MOVs. Since the relief valves will be isolated from the post accident containment sump, the probability of malfunction of the relief valves is eliminated.

Question 4

Will the consequences of a malfunction of equipment important to safety be increased?

The answer is no.

Changing the valve line-up, as discussed in ER002950E201, does not increase risk weight factors for any component's contribution to core damage frequency for any accident scenario. Since the risk weight factors are not increased, the consequences of malfunction of the ECCS suction MOVs from the containment sump, 2CV-5649-1 and 2CV-5650-2 are not increased.

Isolating the relief valve from the bonnet of the MOV with a manual valve does not increase the consequences of manual valve failure because the relief valve is still installed downstream of the manual valve. The consequences of relief valve failure are reduced, however, since the manual valve is closed.

Question 5

Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

The answer is no.

The system functions to mitigate an accident. The position of the manual valve can only impact operation of the MOV and relief valve. Therefore, no new or different type accidents are created by this change.

Question 6

Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

The answer is no.

Closing the manual valves does not introduce any new failure mode except the possibility of pressure locking of the ECCS containment suction MOVs. Engineering calculation 95-E-0041-04 documents that the MOVs are operable in worst case conditions. Since the valves are operable, no new failure mode is introduced. Therefore, the possibility of a new type of malfunction is not created.

Question 7

Will the margin of safety as defined in the basis for any technical specification be reduced?

The answer is no.

The Technical Specification bases were reviewed. The basis for any Technical Specification does not list safety margin associated with this configuration. There is no Technical Specification basis interpretation that can be applied to the configuration change. Therefore, the margin of safety in TS bases is not reduced.

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FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

This Document contains 3 Pages.

Document No. ER002990E201Rev./Change No. 0Title Isophase Cooling Valve Position Change

Brief description of proposed change:

The discharge valves for the isophase bus coolers (2CCW-65A and 2CCW-65B) are currently shown open. This evaluation permits throttling of the valves and updates the SAR and the P & ID.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
 - QAPM? Yes No
 - E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

FORM TITLE: 10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0
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Document No. ER002990E201 Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

Q1. A search was performed using ZyFind (Index 50.59 – Unit 2) and the following search phrases: (iso-phase or isophase) w/10 cooling, (iso-phase or isophase), and bus* w/10 cooling. No impact on the operating license was indicated.

Q2. Changes are required to SAR figure 9.2-6 to show the valves as throttled. No other impact was indicated.

Q3. The proposed change, throttling 2CCW-65A and 2CCW-65B is considered to be within the normal operating mode of the system and it is therefore not a test or an experiment not described in the SAR.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____. (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS:	Index 50.59 – Unit 2 ((iso-phase or isophase) w/10 cooling) (iso-phase or isophase) (bus* w/10 cooling)

MANUAL SECTIONS: 9.2.2, Chapter 9 tables

FIGURES: Chapter 9 and Chapter 6

<u>Edward R. France</u>	<u>EDWARD R. FRANCE</u>	<u>11-02-2000</u>
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 5-27-2001

Assistance provided by:

<u>Printed Name</u>	<u>Scope of Assistance</u>	<u>Date</u>
<u>Mark Harris</u>	<u>Provided Draft</u>	<u>11-2-00</u>
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

<u>David MacPhee</u>	<u>DAVID MACPHEE</u>	<u>11/2/00</u>
Certified Reviewer's Signature	Printed Name	Date

FORM TITLE:

10CFR50.59 DETERMINATION

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1000.131A

REV.
003-04-0

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Document No. ER002990E201

Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

This Document contains 1 Page.

Document No. ER 002990E201 Rev./Change No. 0 10CFR50.59 Eval. No. FFW #00-141
 (Assigned by PSC)

Title Isophase cooling valve position change

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No
2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No
3. Will the probability of a malfunction of equipment important to safety be increased? Yes No
4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No
5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No
6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No
7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

1. Accidents that are related to the proposed change are those that could result from a generator fault and a subsequent turbine trip. These include 15.1.7 (Loss of external load and/or turbine trip), 15.1.9 (Loss of all normal and preferred AC power to the station auxiliaries), 15.1.29 (Turbine trip with coincident failure of the turbine bypass valves to open), and 15.1.33 (Turbine trip with failure of generator breaker to open). The flow to the coils will be maintained within a range that will permit the coil to transfer the design heat rate from the isophase ducts. The current CCW velocity exceeds the recommended velocity for the application. The proposed action however will reduce the CCW velocity through the coils and any subsequent erosion rate and would therefore not increase the probability of the initiation of any of these accidents.
2. The proposed change does not impact any equipment credited with accident mitigation nor does it affect fission product barriers or introduce new pathways for fission product release. Furthermore this activity does not create new or aggravate existing onsite dose consequences that might restrict access to vital areas or otherwise impede mitigating actions.
3. The isophase coolers and their related sub-components are not considered "important to safety." Additionally, once the proposed change is implemented, the reliability of the coolers and therefore the bus coolers should be improved. Since the design heat transfer of the coils should be maintained at this flow rate, the probability of a malfunction of any equipment should not be increased by this proposed change.
4. The proposed change does not impact any equipment credited with accident mitigation nor does it affect fission product barriers or introduce new pathways for fission product release. Furthermore this activity does not create new or aggravate existing onsite dose consequences that might restrict access to vital areas or otherwise impede mitigating actions. The proposed change does not adversely impact the radiological consequence of equipment malfunctions identified in the SAR.

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- 5. The proposed action does not create any new circumstances, failure scenarios or interactions between SSCs that have not already been evaluated. As such no new accident scenarios are created.
- 6. The proposed action does not create any new equipment functions or impact the method of performing existing equipment functions. Therefore no new failure mechanisms are postulated.
- 7. The isophase coolers are not identified in the technical specifications 3/4.7 (Plant Systems) and 3/4.8 Electrical Power Systems or their bases. Therefore the margin of safety defined in the basis for any technical specification is not reduced.

Edward R France EDWARD R. FRANCE 11-2-00
 Certified Reviewer's Signature Printed Name Date

Reviewer's certification expiration date: 5-27-2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
Mark A. Harris	Provided draft	11/2/00
_____	_____	_____
_____	_____	_____

PSC review by: VBW Date: 11/16/00

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FORM TITLE: 10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0
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This Document contains 4 Pages.

Document No. ER002998N201 Rev./Change No. 0

Title Control Room Door Closure on Control Room Isolation Signal

Brief description of proposed change:

This mod package will install the 2R14 portion of the ANO-2 Shift Manager's office door auto-close actuation circuitry. The 2R14 scope consists of the following items.

- seismically install 4 relays, 1 fuse, and 1 fuseholder in the Q portion of 2C21-1
- terminations in 2C21-1
- route cable from 2C21-1 to 2C22
- route cable from 2C21-1 to the vicinity of the Shift Manager's office door.

The overall purpose of this mod is to provide a means for automatic closure of the ANO-2 Shift Manager's office door when a control room isolation signal is generated. This door (DR-450) is considered to be part of the boundary for the control room envelope and it must be closed within 10 seconds upon receipt of a control room isolation signal. In order to implement this mod in a timely fashion and at the same time minimize the impact on the outage, only the work described above will be performed during 2R14 while the unit is shut down. At a later time (non-outage) the door closure hardware and release mechanism will be installed to complete the mod.

This 50.59 review only addresses the 2R14 portion of this mod, including the field installation. The control room emergency ventilation system will be placed in the emergency recirculation mode during installation activities to preclude inadvertent CREVS actuations.

A revision to the mod package for the door closure hardware and release mechanism will be prepared at a later date and at that time the 50.59 review will be revised to address the overall change.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No

FORM TITLE: 10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0
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Document No. ER002998N201 Rev./Change No. 0

Title Control Room Door Closure on Control Room Isolation Signal

- Bases of the Technical Specifications? Yes No
- Technical Requirements Manual? Yes No
- NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance) Yes No
- Result in a potential impact to the environment? (Complete Environmental impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
- QAPM? Yes No
- E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

Basis for Determination (Questions 1, 2, & 3):

A search using LRS did not reveal any changes to the technical specifications, operating license, or confirmatory orders as a result of this mod. Similarly, no changes are necessary to the documents in Question 2 above with the exception of the SAR. The mod package is revising Unit 2 SAR Figure 8.3-67 which is a conduit and cable tray layout drawing. An LDCR will be submitted to Licensing. This mod package does not constitute a test or experiment according to the guidelines of OP-1000.131, Attachment 2. The post-mod testing will be based on the monthly chlorine and radiation detector functional test. This monthly test is part of a previously approved procedure (OP-2104.007, Supplement 3.)

- Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____. (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.

FORM TITLE:

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003-04-0

Document No. ER002998N201

Rev./Change No. 0

Title Control Room Door Closure on Control Room Isolation Signal

Document

Section

LRS:

50.59 Common

All (control room isolation, 2C21, 2C21A, 2C21B, shift w/20 doors, control room envelope, coil w/20 isolation, CREVS, control w/20 door, chlorine w/20 isolation)

MANUAL SECTIONS:

Unit 2 SAR	6.4, 9.4, 12.2, 15.1.13, 15.1.26
Unit 2 Tech Specs	3/4.3.3, 3/4.7.6
Unit 2 TRM	3.3
Unit 1 SAR	9.7
Unit 1 Tech Specs	3.5.1.13, 3.9
Unit 1 TRM	3.5

FIGURES:

Unit 2 SAR Figures 9.4-1, 8.3-67


Certified Reviewer's Signature

Thomas W. Ott
Printed Name

11-3-2000
Date

Reviewer's certification expiration date: 6-16-2001

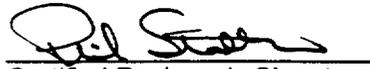
Assistance provided by:

Printed Name

Scope of Assistance

Date

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)


Certified Reviewer's Signature

Phil Stadler
Printed Name

11-3-00
Date

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

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003-04-0

Document No. ER002998N201

Rev./Change No. 0

Title

Control Room Door Closure on Control Room Isolation Signal

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

ARKANSAS NUCLEAR ONE

FORM TITLE:

10CFR50.59 EVALUATION

FORM NO.

1000.131B

REV.

003-04-0

This Document contains 2 Pages.

FFN#
10CFR50.59 Eval. No. 00 - 133
(Assigned by PSC)

Document No. ER002998N201

Rev./Change No. 0

Title Control Room Door Closure on Control Room Isolation Signal

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

This mod package will install the 2R14 portion of the ANO-2 Shift Manager's office door auto-close actuation circuitry. The 2R14 scope consists of the following items:

- seismically install 4 relays, 1 fuse, and 1 fuseholder in the Q portion of 2C21-1
- terminations in 2C21-1
- route cable from 2C21-1 to 2C22
- route cable from 2C21-1 to the vicinity of the Shift Manager's office door.

This 50.59 evaluation only addresses the 2R14 portion of this mod, including the field installation. A revision to the mod package for the door closure hardware and release mechanism will be prepared at a later date and at that time the 50.59 review will be revised to address the overall change. The components installed by this mod and the interfacing components are not considered to be initiators of accidents. The failure of these components will not cause an accident to occur.

2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

The response of systems that are designed to mitigate the consequences of an accident will not change as a result of this mod package. Those systems will continue to function in exactly the same manner as they now do. The changes made by this mod package will not impede the function of existing systems. The control room emergency ventilation system will be placed in the emergency recirculation mode during installation of this mod. This action will place the system in the configuration required for accident mitigation. This action is permitted by technical specification 3/4.3.3. Therefore the consequences of Chapter 15 accidents will not increase.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

Installation of this mod package will not compromise existing safety related equipment. Design standards for separation of 1E and Non-1E components have been followed. New components are to be seismically mounted to prevent any impact on safety related equipment during a seismic event.

4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The functions of existing safety related equipment will not be affected by this mod package. Thus, this equipment will be available to perform the intended design function when required. Since the function of safety related equipment and its' ability to perform is not changed, the consequences of

of a malfunction will not change. The failure modes and effects for safety related equipment will not change. The control room emergency ventilation system will be placed in the emergency recirculation mode during installation of this mod. This action will place the system in the configuration required for accident mitigation. This action is permitted by technical specification 3/4.3.3.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

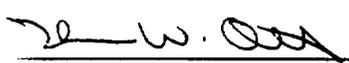
This mod package does not introduce any new components which can initiate an accident, either previously analyzed or of a different type. Equipment separation criteria have been followed and the new components will be seismically mounted. This will prevent the new components from having an adverse effect on existing components.

Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

Design standards have been employed in this mod package to prevent the new components from having any impact on safety related equipment. The failure modes of existing safety related equipment are not changed by this mod package. The installation does not place the plant in an operating mode not covered by existing approved procedures.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

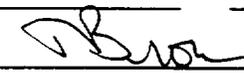
A review of the technical specification bases did not identify any margins of safety that will be degraded by this design change. The changes made by this mod package will have no impact on existing margins.

	Thomas W. Ott	11-3-2000
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 6-16-2001

Assistance provided by:

Printed Name	Scope of Assistance	Date

PSC review by:  Date: 11/7/00

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ARKANSAS NUCLEAR ONE		FORM NO. 1000.131B	REV. 003-04-0
FORM TITLE:	10CFR50.59 EVALUATION		

This Document contains 2 Pages.

10CFR50.59 Eval. No. FFN # 00-118
(Assigned by PSC)

Document No. **ER003021E201**

Rev./Change No. **0**

Title **Eval of 2VSF-9 Outside Air Damper Cover During Power Swap**

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- 1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

The Control Room Emergency Ventilation System is not an accident initiator in the safety analysis in either Unit 1 or Unit 2 SAR. Therefore, placing a cover on the air inlet of the Unit 2 Control Room Emergency Supply Fan will not increase the probability of a previously evaluated accident.

- 2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

During the time the cover is installed the Units will enter their respective Limiting Conditions of Operations for this condition as described in the Tech Specs. Because the condition is within the allowable conditions in the Tech Specs, the offsite dose consequences of the evaluated accidents have been evaluated and accepted by the NRC.

- 3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The Unit 2 Control Room Emergency Supply Fan will be out of service while the cover is installed. The cover can have no affect on any other plant equipment. The cover will maintain the Control Room envelope integrity while the supply damper is open during the power swap. Therefore, the probability of a malfunction of any other equipment important to safety will not be increased.

- 4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The cover will be installed as a temporary measure to maintain Control Room envelope integrity during the power swap. Before the cover is installed and after it is removed, the plant will be consistent with both units SARs. While the cover is in place, only the Unit 1 fan will be available. This condition is within the Tech Specs and is governed by the Limiting Conditions of Operation in the Tech Specs. This condition has therefore been previously evaluated by the NRC as acceptable for dose consequences.

ARKANSAS NUCLEAR ONE		
FORM TITLE: 10CFR50.59 EVALUATION	FORM NO. 1000.131B	REV. 003-04-0

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

The installation of the cover will only affect the Unit 2 Control Room Emergency Supply Fan. The cover has been analyzed and will not affect the seismic qualification or structural integrity of the duct. The cover material is compatible and similar to the existing ductwork. The fan will be out of service during the time the cover is installed and therefore, the cover could not affect any structures or equipment downstream of the fan. The fan is not located near any other safety-related equipment. Therefore, it is improbable that the cover could create the possibility of any new accident.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

The only equipment in contact with the cover is the Unit 2 Control Room Emergency Supply Fan. The fan will be out of service while the cover is installed. If the cover could somehow damage the fan, that condition has been analyzed and is covered by the Unit 1 and 2 Tech Specs. Therefore, the possibility of a malfunction of equipment important to safety of a different type is not created.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

The Unit 2 Control Room Emergency Supply Fan has no affect on the Fuel Cladding, RCS Boundary or Containment Building Pressure. Therefore, the margin of safety for these parameters will be unaffected by the installation of the temporary cover.


 Certified Reviewer's Signature Steve Bonner Printed Name 10/7/00 Date

Reviewer's certification expiration date: 8/3/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
N/A		

PSC review by:  Date: 10/7/00

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ARKANSAS NUCLEAR ONE

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

This Document contains 3 Pages.

Document No. ER 003056N201

Rev./Change No. 0

Title Relocate Fuel System Trouble alarm for 2DG1 and 2DG2 from ann. window 2K08-G1 to 2K08-K1 and 2K09-G1 to 2K09-K1 respectively.

Brief description of proposed change: See title.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No

3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No

4. Result in a potential impact to the environment? (Complete the Environmental Impact Determination of this form.) Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7:
 - QAPM? Yes No
 - E-Plan? Yes No

8. Does this review depend on future NRC approval of other actions (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

ER003056N201

PAGE 4 REV 0

ARKANSAS NUCLEAR ONE		
FORM TITLE: 10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0

Document No. ER 003056N201

Rev./Change No. 0

Basis for Determination (Questions 1, 2 & 3):

See continuation page.

Proposed change does not require 10 CFR 50.59 Evaluation per Attachment 1, Item #_____, (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in Question 1, 2 and 3. If a search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS: 50.59 Unit-2	Diesel Generator, EDG, Fuel System, 2K09, 2K08

MANUAL SECTIONS: ANO-2 SAR	Sections 9.5.4.1, 9.5.4.2, 9.5.4.3 and 8.3.1.1.8.10
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FIGURES: Unit 2-SAR	Figures 8.3-50 sheet 3A and 3B, Figure 9.5-8
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<u>M. Mehta</u>	<u>Nick Mehta</u>	<u>10-19-00</u>
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 03/24/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Review per 1000.006)

<u>N.R. Kennedy</u>	<u>N.R. Kennedy</u>	<u>10-23-00</u>
Certified Reviewer's Signature	Printed Name	Date

ARKANSAS NUCLEAR ONE		
FORM TITLE:	10CFR50.59 DETERMINATION	FORM NO. 1000.131A
		REV. 003-04-0

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. 003056N201

Rev./Change No. 0

Complete the following Determination. If the answer to any checklist item is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

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Document No. **ER 003956N201**

Rev./Change No. **0**

10CFR50.59 Review Continuation Page

It was discovered that there is a cross-connect between two annunciator windows 2K09-F6 (SW Bay Sluice Gate Failure) and 2K09-G1 (Fuel System Failure for 2DG2) during routine maintenance. Due to the construction of the annunciator internals, it was difficult to fix it and would damage existing wiring or logic cards. Therefore, it was decided to relocate one of the existing alarms to a different window.

ER 003056N201 will relocate Fuel System Trouble alarm for 2DG2 from ann. window 2K09-G1 to 2K09-K1. Similar change will also be done for Fuel System Trouble alarm for 2DG1 from ann. window 2K08-G1 to 2K08-K1 so that panels 2K09 and 2K08 will remain identical for their given train.

This modification will not change any design basis, annunciation logic or operational function of the emergency diesel generator.

Basis for Determination.

Basis for Determination (Questions 1,2 and 3)

1. Unit-2 Technical Specifications does not provide the level of detail to address this modification. Therefore, the Technical Specifications will not impacted this modification.

No Unit-2 Confirmatory Orders or Operating License were found which would be impacted by this modification.

2. This modification will impact Unit-2 SAR Figures. The SAR Figures 8.3-50 sheets 3A and 3B (drawings E-2456 sheets 1A and 1B, Schematic Diagram for 2DG1 and 2DG2 control panels) and Figure 9.5-8 (drawing M-2217 sheet 1, P&ID for EDG Fuel Oil System) will be revised to show new ann. window location for Fuel System Failure alarm for 2DG1 and 2DG2.

This modification will not result in revision being necessary for the Unit-2 NRC Safety Evaluation Reports, COLR, FHA, TRM and the bases for the technical specifications. None of these documents provides sufficient detail such as to be affected by this design change.

3. This modification does not involve any test or experiments not described in the Unit-2 SAR.

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ARKANSAS NUCLEAR ONE

FORM TITLE: <p align="center">10CFR50.59 EVALUATION</p>	FORM NO. <p align="center">1000.131B</p>	REV. <p align="center">003-04-0</p>
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This Document contains 2 Pages.

10CFR50.59 Eval. No. FEN#00-127
 (Assigned by PSC)

Document No. **ER 003056N201**

Rev./Change No. **0**

Title **Relocate Fuel System Trouble alarm 2DG1 and 2DG2 from ann. window 2K08-G1 to 2K08-K1 and 2K09-G1 to 2K09-K1 respectively.**

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

The Fuel System Failure alarm for EDG has not been discussed or analyzed in the Unit-2 SAR. However, this modification will not change any design bases, annunciation logic or operational function of the Emergency Diesel Generator. This change will relocate the Fuel System Failure alarm for 2DG1 and 2DG2. These alarms are only for indication of system failure. Therefore, this will not create any new accident or the probability of an accident previously evaluated in the SAR be increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

The off-site dose consequences will not be increased by relocating annunciator windows for Fuel System failure alarm. As described above, this modification will not change any design bases, annunciation logic or operational function of the Emergency Diesel Generator. This change will relocate the Fuel System Failure alarm for 2DG1 and 2DG2. A Human Factors Review has been performed and found acceptable. The new annunciator windows are located in the same column as the existing window locations. Therefore, this modification will not increase the consequences of an accident evaluated previously evaluated in the SAR.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The Fuel System Failure alarm for EDG does not have any interference with safety related systems. The human factors reviews has been performed with respect to safety. These alarms are for indication purpose only. The Fuel System Failure alarm indication is provided at local and remote (control room) panels. Therefore, the failure indication at control room will not increase the probability of a malfunction of equipment important to safety.

4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

This modification will not change any design bases, annunciation logic or operational function of the Emergency Diesel Generator. This change will relocate Fuel System Failure alarms for 2DG1 and 2DG2. A Human Factors Review has been performed. These alarms are only an indication of system status. Therefore, the proposed change will not increase the consequences of a malfunction of equipment important to safety.

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5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

These alarms are for Fuel System Failure indication and can not create a new accident. Therefore, the possibility of an accident of a different type than any previously evaluated in the SAR will not be created by this modification.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

As described above, this modification does not change any design bases, annunciation logic or operational function of the Emergency Diesel Generator. No new plant conditions or system conditions are being created that could cause a malfunction of equipment important to safety that is different from those malfunctions previously evaluated. Therefore, the proposed change will not create the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

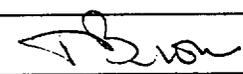
The margin of safety in the technical specifications bases are not affected by this modification. Therefore, it will not reduce the margin of safety as defined in the basis for any technical specifications.

N. Mehta Nick Mehta 10/19/00
 Certified Reviewer's Signature Printed Name Date

Reviewer's certification expiration date: 03/24/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
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PSC review by:  Date: 11/2/00

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N 2/11-4-00

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This Document contains 3 Pages.

Document No. ER003104N201

Rev./Change No. 0

Title Permanent Removal of 2TE-8200 thru 2TE-8207

Brief description of proposed change:

PC 91-8029 installed two temperature elements inside each of the four reactor building coolers as a part of thermal performance monitoring of the service water cooling coils. Correspondence with the NRC and other documents later documented that thermal performance monitoring of air-to-water service water coils did not achieve accurate results and would not be performed. The elements installed per PC 91-8029 are not electrically connected to any plant equipment and have not been used since 1993.

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Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
 - QAPM? Yes No
 - E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

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Basis for Determination (Questions 1, 2, & 3):

PC-91-8029 installed two temperature elements in each reactor building cooler for service water thermal performance testing. This was in response to GL 89-13 requirements for measuring thermal performance of various SW heat exchangers. The intent of PC-91-8029 was to install elements upstream and downstream of the SW coils to obtain SW coil differential temperature with a hand held measuring device. It was later documented in 0CAN109205 and CALC-91-R-2013-01 that thermal performance monitoring on air-to-water SW heat exchangers was not a reliable method and would not be used in the future. Currently, inspection and air and water flow rates are measured to verify proper function of air-to-water SW heat exchangers at ANO. ER003104N201 allows for the removal of the 8 temperature elements installed under PC-91-8029. There will be no impact on the documents listed in Question 1 should this change be implemented. Operating license documents do not contain enough detail to be affected by this change nor will this change cause statements to become untrue or invalid as a result. SAR Figure 9.4-4, M2261 sh 1, is affected by this change and an LDCR has been submitted. Other than this, no documents listed in Question 2 are affected by the modification proposed by this ER. The proposed change does not involve a new test or experiment not addressed in the existing documents. Therefore, it is concluded that a 50.59 Evaluation is required due to the deletion of temperature elements on SAR Figure 9.4-4.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____ (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

Document	Section
LRS: <u>50.59 Unit 2</u>	<u>"2VSF-1", "service" w/5 "water" w/20 "performance", "2TE-8200"</u>

MANUAL SECTIONS: 9.4.5

FIGURES: 8.3-69, 8.3-70, 8.3-71, 9.2-1, 9.4-4

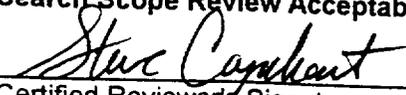
	R. Kirk Ehren	10-26-00
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 02/28/2002

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	Steve Capelhart	11-6-00
Certified Reviewer's Signature	Printed Name	Date

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

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Document No. ER003104N201

Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

This Document contains 2 Pages.

Document No. ER003104N201 Rev./Change No. 0 10CFR50.59 Eval. No. FFN# 00-13
 (Assigned by PSC)
 Title Permanent Removal of 2TE-8200 thru 2TE-8207

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

RBHV system is not an accident initiator. The temperature elements installed in the RBHV coolers are not electrically attached to any plant equipment and do not activate any equipment. No analysis takes credit for these elements and they are not used for any TS surveillance tests. Therefore, removal of the elements will not affect the probability of a previously evaluated accident.

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2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

Removal of the elements will return the reactor building coolers to their original design configuration. The proposed change will not adversely affect the reactor building coolers from performing their safety function, and is not associated with any other components. Therefore offsite dose analysis will be unaffected.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The proposed change will allow the reactor building coolers to be returned to their original design configuration. Removal of the elements will not affect the safety function of the reactor building coolers. Therefore, the probability of a malfunction of equipment important to safety will be what is currently analyzed in the design basis.

4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The proposed change will return the reactor building coolers to their original design basis condition and will not affect their ability to perform their safety function. Since the coolers will be unaffected, offsite dose consequences will also be unaffected.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

Removal of the temperature elements will return the reactor building coolers to their original design and will be unaffected by the proposed change. The elements are for local monitoring and do not alarm or activate any plant equipment. Since these elements are benign to safety related equipment, no new accident scenarios from what has previously been evaluated in the SAR will be introduced.

N 11-4-00

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6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

The reactor building coolers have previously been evaluated in the SAR for accident conditions. The proposed change does not affect any other equipment and does not affect the design function or structure of the coolers. Therefore, no possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR will be created.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

The reactor building coolers are used for post accident pressure/temperature control. Pressure control is a TS requirement to protect one of the fission product barriers, however the proposed change will not affect operation of the coolers nor does it affect any safety margin as defined in the TS basis. Removal of the temperature elements will return the reactor building coolers to original design therefore safety margins are unaffected

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PAGE 7 REV 0

R. Kirk Ehren
Certified Reviewer's Signature

R. Kirk Ehren
Printed Name

10-26-00
Date

Reviewer's certification expiration date: 02/28/2002

Assistance provided by:

<u>Steve Bonner</u> Printed Name	<u>Review</u> Scope of Assistance	<u>10/26/00</u> Date
_____	_____	_____
_____	_____	_____

PSC review by: fu Fuller Date: 11-9-00

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FORM TITLE:	10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0
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This Document contains 3 Pages.

Document No. ER003109E202

Rev./Change No. 0

Title Relocation of 2RC-8B approximately 3 inches to avoid a tube steel interference

Brief description of proposed change:

This ER is to allow 2RC-8B (pressurizer spray bypass line valve) to be moved within its piping system approximately 3 inches in order to avoid a section of tube steel that is causing an interference problem with the valve. This valve and the piping class will remain the same with no changes in the design functions for the component or system.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
 - QAPM? Yes No
 - E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.
1000.131A

REV.
003-04-0

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Document No. ER003109E202

Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

FORM TITLE:	10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0
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Document No. ER003109E202 Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

This change will shift the valve (2R-8B) approximately three inches in its existing piping system. The valve and system functions remain the same. However SAR figure 3.6-65 will change as a result of the new dimensions and therefore a 50.59 evaluation is required for this change. No other SAR figures or descriptions are changed per this ER. This change will not require a change to the operating license because the slight change in position is beyond the scope of those documents and the system will continue to meet all its design requirements. The shift in valve position does not constitute a test or experiment as defined in the SAR documents.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____. (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.

<u>Document</u>	<u>Section</u>
LRS: U2 5059	all (spray w/10 valve; spray w/10 bypass; pressurizer w/5 spray; "2RC-8A", "2RC-8B"

MANUAL SECTIONS: U2 SAR section 5.5.10.1 through 5.5.10.4

FIGURES: 3.6-65 and 5.1-3

	<u>Lindsley S. Bramlett</u>	<u>11/4/00</u>
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 8/3/2002

Assistance provided by:

<u>Printed Name</u>	<u>Scope of Assistance</u>	<u>Date</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	<u>Bruce Holloway</u>	<u>11/4/00</u>
Certified Reviewer's Signature	Printed Name	Date

FORM TITLE: 10CFR50.59 SAFETY EVALUATION	FORM NO. 1000.131B	REV. 003-04-0
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This Document contains 1 Page.

Document No. ER003109E202 Rev./Change No. 0 10CFR50.59 Eval. No. 00-135
 (Assigned by PSC)

FFN #
00-135

Title Relocation of 2RC-8B approximately 3 inches to avoid a tube steel interference

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- 1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No
- 2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No
- 3. Will the probability of a malfunction of equipment important to safety be increased? Yes No
- 4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No
- 5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No
- 6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No
- 7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No


 Certified Reviewer's Signature

Lindsley S. Bramlett
 Printed Name

11/4/00
 Date

Reviewer's certification expiration date: 8/3/02

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

PSC review by:  Date: 11/4/00

FORM TITLE:

10CFR50.59 REVIEW CONTINUATION PAGE

FORM NO.

1000.131C

REV.

003-04-0

Document No. ER003109E202Rev./Change No. 010CFR50.59 Review Continuation Page

Question 1.

The proposed change shifts the valve location about 3 inches within the same pipe line. This does not increase the probability of an accident because the system function and design remains the same. Therefore the change remains bounded by the original design requirements and bounded by the original design basis accidents.

Question 2.

The proposed change does not change the consequences of an accident as previously analyzed in the SAR. This is because the change simply shifts the valve location about 3 inches within the same pipe line. No functional changes are made to the component or system and the barriers to mitigate dose remain intact. Therefore no change in accident consequences are possible.

Question 3

The proposed change does not change the probability of a malfunction of equipment important to safety. Since the system function and design is not changed and the existing design requirements are satisfied without a reduction in margin, the change is bounded by the original probability. This change simply results in a SAR drawing figure change.

Question 4

The proposed change does not change the consequences of an equipment malfunction. This is because the equipment remains the same and is only slightly relocated. The relocation of the valve does not change the barriers to mitigate dose. Since the equipment is not changed, it is bounded by the original consequences.

Question 5

The proposed change does not create the possibility of an accident of a different type than previously analyzed. This is because the valve remains within its original system with its original design function. The slight relocation of the valve is bounded within the previously analyzed accidents. Since the new location was evaluated for any changes in piping analysis and found to be acceptable, it remains bounded by the original accidents. No new or different failures have been created.

Question 6

The proposed change does not create the possibility of a different type of malfunction of equipment important to safety. This is because the equipment and system remains the same and therefore no new types of malfunctions are possible. The change in location of the valve is bounded under the existing piping analysis.

Question 7

The margin of safety as defined in the basis for technical specifications are not changed by this proposed change. This is because the equipment remains the same and the results of the piping analyses are not degraded. ASME code requirements are maintained for this change.

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This Document contains 3 Pages.

Document No. ER003111E201 Rev./Change No. _____

Title T-Alt in REACTOR BUILDING PURGE SAMPLING PROCEDURE 2607.014

Brief description of proposed change:

Procedure is being revised to include references to EPlan Procedure 1905.003, U2 Operations Procedure 2104.044, and recently issued NRC Letter 0CNA080005 Commitment P-16725. The commitment requires that ANO have contingency plans in place to obtain samples from the containment air post event. Attachment 1 of this procedure along with EPlan procedure 1905.005 will be used to collect the post event containment air samples. Additionally, all Post Accident Sampling System (PASS) references are being deleted from the procedure. And finally, requirements for installing temporary alteration when sampling 2RE-8231-1 and 2RE-8271-2 were included in this procedure change.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?	Yes	No X
Operating License?	Yes	No X
Confirmatory Orders?	Yes	No X

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?	Yes	X No
Core Operating Limits Report?	Yes	No X
Fire Hazards Analysis?	Yes	No X
Bases of the Technical Specifications?	Yes	No X
Technical Requirements Manual?	Yes	No X
NRC Safety Evaluation Reports?	Yes	No X

3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)

	Yes	No X
--	-----	------

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

	Yes	No X
--	-----	------

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

	Yes	No X
--	-----	------

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

	Yes	No X
--	-----	------

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAPM?	Yes	No X
E-Plan?	Yes	X No

8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9)

	Yes	No X
--	-----	------

Document No. ER003111E201 Rev./Change No. _____

Basis for Determination (Questions 1, 2, & 3):

- 1) The 50.59 search did not yield any items that require changing the TS, OPS License or Confirmatory Orders. The Change, when used, will not be permanent and will not permanently change any Licenses bases documents. This T-alt will be implemented, controlled and removed by procedure 2607.014.
- 2) As noted above in question 2, the SAR does not show the T-Alt, so installing the T-Alt will change SAR Figure 9.4-4. The other documents listed in question 2 are not affected.
- 3) The T-Alt allows Chemistry to obtain samples using a method not described in the SAR. The method, however, is not a test or experiment. This method for obtain a sample does not create a configuration that tests or challenges nuclear safety.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____, (if checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS: 2TS, 2OPS License, 2CO, 2SAR, 2SER, 2TS bases, E-Plan, QA Manual, FHA, 2COLR, TRM, ODCM	ALL [50.59-Unit 2] (Post Accident sampling w/10 containment, post accident sampling, PASS, NUREG 0737, "1.109", Regulatory Guide 1.109, containment air w/10 sampl*, reactor building air w/10 sampl*)
MANUAL SECTIONS: U2 TS U2 SAR	Section 6.8.1.J Sections 3.8.4.1.H, 9.3.2, 9.3.2.1, 9.3.2.2.4, 11.3.6.10, 11.4.2.2.4, 12.1.4.3, Tables 1.2-1, 1.7-1, 3.2-2, & 7.5-3
EPlan	Section I 2.2.6, Section B 2.4.5 & 3.3.4, & Section N step 2.5
FIGURES: EPlan	Section B Figure B-4

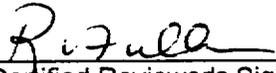
	Keith Perkins	10/22/00
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 7/31/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	Randall V. Fuller	11-9-00
Certified Reviewer's Signature	Printed Name	Date

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER003111E201

Rev./Change No. _____

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

YesNo

- | | | |
|--------------------------|---|---|
| <input type="checkbox"/> | X | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | X | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | X | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | X | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | X | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | X | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | X | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | X | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | X | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | X | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | X | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | X | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | X | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

This Document contains 1 Page.

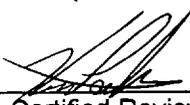
Document No. ER003111E201 Rev./Change No. _____ 10CFR50.59 Eval. No. FFM# 00-151
 (Assigned by PSC)

Title T-Alt in and controlled by 2607.014 for Post Accident Sample from CAMS

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

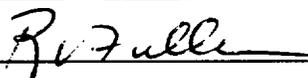
- | | | |
|--|-----|--|
| 1. Will the probability of an accident previously evaluated in the SAR be increased? | Yes | No <input checked="" type="checkbox"/> |
| 2. Will the consequences of an accident previously evaluated in the SAR be increased? | Yes | No <input checked="" type="checkbox"/> |
| 3. Will the probability of a malfunction of equipment important to safety be increased? | Yes | No <input checked="" type="checkbox"/> |
| 4. Will the consequences of a malfunction of equipment important to safety be increased? | Yes | No <input checked="" type="checkbox"/> |
| 5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? | Yes | No <input checked="" type="checkbox"/> |
| 6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? | Yes | No <input checked="" type="checkbox"/> |
| 7. Will the margin of safety as defined in the basis for any technical specification be reduced? | Yes | No <input checked="" type="checkbox"/> |

	Keith Perkins	10/22/00
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 7/31/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

PSC review by:  Date: 11-9-00

1. Will the probability of an accident previously evaluated in the SAR be increased?

The answer is No.

Alternate Sample Method and System Piping.

The SAR does not credit an alternate sampling method as an initiating event for an accident. The procedure directs Chemistry to align valves located outside of containment such that an atmospheric sample from the reactor building can be obtained. The piping used for this sample is not credited as being capable of initiating an accident. Since neither alternate sample methods nor the piping used to obtain the sample are credited as an accident initiator, the probability of an accident previously evaluated in the SAR is not increased.

Containment Integrity & Core Alterations

The piping system used to obtain the sample is seismic piping required to be closed when Containment Integrity is required (Modes 1-4 ref. TS 3.6.1.1, TS 3.6.1.2 & TS 3.6.3.1). The piping is part of a "closed loop outside containment" that supplies both a CAMS unit and a Post Accident Hydrogen Analyzer (PAHA). The T-Alt is seismic if installed per ER003111I201. Since the procedure provides specific instructions for installation of the T-Alt, the T-Alt will meet require seismic standards. Therefore, Containment Integrity is not challenged due to seismic concerns while the T-Alt is installed.

The valves used to isolate the T-Alt are part of the closed loop outside containment. These valves will be controlled by procedure 2607.014. Administrative controls in the procedure ensure a person is stationed to close the valves immediately following an accident. The valves will be closed prior to PAHA operation. Per ER003111I202, the Chemist has 70 minutes to close the manual sample valves and notify the control room. The penetration CIVs are over-ridden and opened to place the PAHA in service and align it to containment. Since the penetration CIVs are not opened until after the T-ALT sample valves are closed, Containment Integrity is not challenged and not required. Therefore, the Tech Spec for Containment Integrity need not be entered while the T-Alt sample valves are open. This is consistent with administrative controls in 1015.034 (Containment Penetration Administrative Control).

TS 3.9.4 lists requirements for containment closure during fuel movement. Sampling containment atmosphere via this path will create an opening that is not permitted by TS. No administrative exemption is listed in TS 3.9.4 as discussed in TS 3.6.1.1 and TS 3.6.3.1. Procedure 2607.014 requires specific warnings to prevent using this method to sample containment during core alterations.

The TS requirements for Containment Integrity discussed above were written to mitigate the consequences of an accident not to prevent or reduce the probability of

an accident. Therefore, implementing this T-Alt does not increase the probability of an accident previously evaluated in the SAR.

CAMS and Post Accident H2 Analyzer operation during normal OPS.

Since the T-Alt piping is seismic and since the T-Alt sample valves will be closed prior to PAHA alignment, operability of the PAHA is not challenged and the TS for the PAHA need not be entered.

Since the only time this method of sampling should be used at power is when both CAMS units are INOP, installation of the T-Alt should not impact operability of the CAMS unit (i.e. the CAMS is already INOP.) If, however, the T-Alt is installed on an Operable CAMS, then the CAMS must be declared INOP. The CAMS will be INOP from the time the first T-Alt sample valve is opened until the last T-Alt sample valve is closed.

Procedure 2607.014 requires notifying OPS about the inoperability of CAMS.

The CAMS system is credited as a system capable of detecting an RCS leak prior to large RCS break. The "Leak before Break" concept is credited for reducing the probability of an accident. As long as the opposite train CAMS is OPERABLE and operating the CAMS system can perform its intended function. Since the sample method does not challenge OPERABILITY of the opposite CAMS train, its ability to perform Leak before Break detection is not degraded. Therefore, the probability of an accident previously evaluated in the SAR is not increased.

CAMS and Post Accident H2 Analyzer operation during post accident OPS.

During accident conditions the CAMS units are automatically isolated from the post accident environment. The CAMS is not designed to withstand post accident pressure or leakage criteria. The T-Alt utilizes valves between the containment bldg and the CAMS system. Therefore, the T-Alt has no impact on the post accident CAMS.

The EOPs require alignment of both of the PAHAs following accident conditions. As discussed above, this will not impact the probability of an accident since inoperability of an analyzer is not credited as an accident initiator. Therefore, the probability of an accident previously evaluated in the SAR is not increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

The answer is No.

CAMS

As discussed above, implementing the T-Alt will render a train of CAMS inoperable. The only time this method of sample will be used at power is when both CAMS are inoperable. The Tech Specs require this sample when the CAMS are inoperable. Taking this sample meets the requirements of TS. Since the TS are satisfied by the sample this T-Alt does not increase the consequences. The CAMS is a system design to prevent or reduce the likelihood of an accident but does nothing to mitigate the consequences of an accident. The SAR does not credit CAMS with accident mitigation. Therefore, the consequences of an accident previously evaluated in the SAR will not be increased. There are no dose consequences as a result of this T-Alt.

PAHA

As discussed above, implementing the T-Alt will not render the PAHA inoperable. The administrative controls established in 2607.014 require an individual be available to close the manual valves should an accident occur. Since the PAHA is not inoperable it is reasonable to conclude that the consequences of an accident previously evaluated in the SAR will not be increased.

Containment Integrity

As discussed above, the requirements delineated in the procedure provide for maintenance of Containment Integrity. Therefore, the consequences of an accident previously evaluated in the SAR will not be increased.

3. Will the probability of a malfunction of equipment important to safety be increased?

The answer is No.

Installation the T-Alt will not create a condition that could damage the piping. Per ER003111E201 the T-Alt is seismic and will not impact piping structural integrity. The sample set-up is maintained clean in order to acquire a meaningful sample. Since the sample set-up is clean, contamination particles large enough to create an OPERABILITY concern with CIVs is not credible. Since Containment piping and CIVs are not adversely impacted by the T-Alt, the probability of a malfunction of equipment important to safety is not increased.

4. Will the consequences of a malfunction of equipment important to safety be increased?

The answer is No.

Since the operability of PAHA is not challenged and since Containment Integrity is maintained, as discussed above, the consequences of a malfunction of equipment important to safety is not increased. Since the CAMS units are not credited as mitigating the consequences of an accident, inoperability of the CAMS units has no impact on post accident consequences.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

The answer is No.

The T-Alt does not create a system or interact with systems such that a new condition could exist that would spawn new or different types of accidents. A walkdown of the system did not identify any means by which the T-Alt could interact with physically adjacent systems such that a new type accident could be created. Therefore, the possibility of an accident of a different type than any previously evaluated in the SAR is not created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

The answer is NO.

The T-Alt impacts Containment, the CAMS and the PAHA. The T-Alt does not introduce configurations that could create new conditions for failure of existing components. A walkdown of the system did not identify any means by which the T-Alt could interact with physically adjacent systems such that a new failure mode could be created. Therefore, the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR is not created.

7. Will the margin of safety as defined in the basis for any technical specification be reduced?

The answer is NO.

The TS basis were reviewed to identify margins that could be impacted by the T-Alt controlled by this procedure. The TS basis do not provide great system detail. Therefore, the minor impact of the T-Alt is beyond the scope of margin addressed in the TS basis. Therefore, the margin of safety as defined in the basis for any technical specification is not reduced.

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FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

This Document contains 3 Pages.

Document No. ER003194N201Rev./Change No. 0Title 2K127 Annunciator Change - A EDG

Brief description of proposed change:

This NCP removes redundant local annunciator circuitry from the "A" EDG. The redundant alarm feature being removed provides indication that the Auto Voltage Regulator has failed and that the EDG is being controlled from the Manual Voltage Regulator. This condition is currently annunciated on two (2) different windows on 2K127.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
 - QAPM? Yes No
 - E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions?
(NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

Page 4 Rev 0

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

Document No. ER003194N201

Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

1. The Tech Specs, Operating License, and Confirmatory Orders do not discuss the voltage regulator for the EDG to this detail.
2. SAR Figures 8.3-50, 8.3-52, 8.3-52 Sheet 1C and 8.3-52 Sheet 1D will be affected by this change. The COLR, FHA, Tech Spec Bases, TRM, and NRC SERs do not discuss this level of detail.
3. This change does not involve any tests or experiments not described in the SAR.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # ____ (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

Document

Section

LRS:

50.59 Unit-2

(2K127*, 2K08*, Voltage w/50 regulator, EDG w/50 reg*, 43MAL, CS2*)

MANUAL SECTIONS:

ANO-2 SAR

Section 8.3, including section 8.3.1.18.10

FIGURES:

ANO-2 SAR

All figures in chapter 8.

N. Mehta

Certified Reviewer's Signature

Nick Mehta

Printed Name

11/05/00

Date

Reviewer's certification expiration date:

03/24/2001

Assistance provided by:

Printed Name

Scope of Assistance

Date

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

Paul D. Crossland

Certified Reviewer's Signature

Paul D. Crossland

Printed Name

11/6/00

Date

Page 5 Rev 0

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER003194N201 Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

Page 6 Rev. 0

FORM TITLE:

10CFR50.59 EVALUATION

FORM NO.

1000.131B

REV.

003-04-0

This Document contains 2 Pages.

10CFR50.59 Eval. No. FFN# 00-131

(Assigned by PSC)

Document No. ER003194^NE201 *WAB 11/6/00*

Rev./Change No. 0

Title 2K127 Annunciator Correction for 2DG1

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased?

Yes No

Emergency Diesel Generator availability is expected in five accidents previously evaluated in the SAR. In the five accidents, the EDG is relied on to mitigate the specific accident, not prevent the occurrence of the accident. The modification of the annunciator circuit will have no effect on the ability of the EDG to start and perform its function. Since the EDG is not an accident initiator, the probability of an accident previously evaluated in the SAR will not be increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

Yes No

The Emergency Diesel Generator is relied upon to mitigate the severity of those accidents that would result in loss of normal AC power. The generator availability will not be changed by this modification. As a result, the offsite dose consequences of the previously evaluated accidents in the SAR will not be increased.

3. Will the probability of a malfunction of equipment important to safety be increased?

Yes No

The Emergency Diesel Generator is the equipment important to safety that is supported by annunciator 2K127. The EDG would still be able to perform its safety function if this annunciator failed totally. Since the EDG is able to perform its function without the annunciator the probability of malfunction of equipment important to safety will not be increased by the modification to the annunciator circuit.

4. Will the consequences of a malfunction of equipment important to safety be increased?

Yes No

The Emergency Diesel Generator is the equipment important to safety that is supported by annunciator 2K127. The EDG will function the same with or without the annunciator. The consequences of a malfunction of the EDG is the loss of its AC power capability which could result in a greater radiation release, however, this is the same consequences before and after the annunciator modification so it will have no effect. The annunciator modification can not increase the consequences of a malfunction of equipment important to safety.

Page 7 Rev. Q

FORM TITLE:

10CFR50.59 EVALUATION

FORM NO.

1000.131B

REV.

003-04-0

EC 003194-N201

- 5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

Yes No

The Emergency Diesel Generator may still be started and will continue to provide its safety function even if 2K127 completely failed. Since the only effect the annunciator can have is on the EDG that it supports, and the EDG can continue to function with or without the annunciator, the possibility of an accident of a different type than any previously evaluated in the SAR cannot be created.

- 6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

Yes No

The Emergency Diesel Generator may still be started and will continue to provide its safety function even if 2K127 completely failed. The modification of the annunciator circuit will not create any new malfunction mode for its EDG and so will not result in a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR.

- 7. Will the margin of safety as defined in the basis for any technical specification be reduced?

Yes No

The margin to safety is not defined for the EDG or annunciator in the technical specification basis.

Paul D. Crossland
Certified Reviewer's Signature

Paul D. Crossland
Printed Name

11/6/2000
Date

Reviewer's certification expiration date: 06/23/2001

Assistance provided by:

Printed Name

Scope of Assistance

Date

PSC review by: [Signature]

Date: 11/6/00

55

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

This Document contains 3 Pages.

Document No. ER003240E201Rev./Change No. 00Title 2D232 Breaker Long Time / Short Time Overcurrent Tripping Device Replacement

Brief description of proposed change:

During testing of U2 125 VDC breaker 2D-0232 the breaker tripped outside of the allowable range. Per ER003240E201, the 400-amp long time/short time overcurrent trip devices will be replaced with spare 225-amp long time/short time overcurrent devices in 2D-0232. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. After installation, testing will be performed to verify proper operation of the breaker and trip devices. See continuation page for further discussion and details.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)? Yes No Operating License? Yes No Confirmatory Orders? Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)? Yes No Core Operating Limits Report? Yes No Fire Hazards Analysis? Yes No Bases of the Technical Specifications? Yes No Technical Requirements Manual? Yes No NRC Safety Evaluation Reports? Yes No 3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)Yes No

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAPM? Yes No E-Plan? Yes No

8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9)

Yes No

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

Document No. ER 003240E201

Rev./Change No. 00

Basis for Determination (Questions 1, 2, & 3):

See attached determination continuation page.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # ____ (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.

Document

Section

LRS: U2-50.59 (2d-02*, od, db, dc w/10 breaker, db* w/10 breaker*, "72-0232")

MANUAL SECTIONS:

U2 SAR 3.10.2.2.6, 8.3.1.2.5, 8.3.1.2.1, 8.3.1.2.4, 8.3.2.1.3, 8.3.2.1.4, 8.3.2.1.5
U2 SAR Tables 8.3-2, 8.3-4B, 8.3-11

FIGURES:

U2 SAR ALL Chp 8
Figure 8.3-16 sh. 1A (E-2017 sh. 1A) affected.

Robert J Buser Certified Reviewer's Signature Robert Buser Printed Name 11/15/2000 Date

Reviewer's certification expiration date: 04/07/2001

Assistance provided by:

Table with 3 columns: Printed Name, Scope of Assistance, Date

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

David A. Robinson Certified Reviewer's Signature DAVID A. ROBINSON Printed Name 11-15-00 Date

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.
1000.131AREV.
003-04-0

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER 003240E201Rev./Change No. 00

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

YesNo

- | | | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

FORM TITLE:

10CFR50.59 REVIEW CONTINUATION PAGE

FORM NO.

1000.131C

REV.

003-04-0

Document No. ER 003240E201Rev./Change No. 0010CFR50.59 Review Continuation Page**Determination Continuation****Summary:**

During testing of U2 125 VDC breaker 2D-0232 the breaker tripped outside of the allowable range. After performing maintenance on the trip devices, the devices performed erratically. Breaker 2D-0232 is a Westinghouse DB25, 600-amp frame, 400-amp trip DC breaker with long time and short time overcurrent trip devices set at 320 amps pickup. There are no spare long time/short time overcurrent devices of this exact size available. Breaker 2D-0232 feeds 1E 125 VDC panel 2D22. Panel 2D22 supplies non-1E loads through 1E breakers. Breaker 2D-0232 is the second 1E breaker in series, which provides separation between the non-1E loads and the 1E power source per the requirements of the U2 SAR. Per ER003240E201, the 400-amp long time/short time overcurrent trip devices will be replaced with spare 225-amp long time/short time overcurrent devices in 2D-0232. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. After installation, testing will be performed to verify proper operation of the breaker and trip devices. All testing related to ER 002340E201 will be performed with the affected equipment inoperable.

Basis for Determination (Questions 1,2, &3):

1. Will the proposed activity require a change to the Operating License?

The changes to the overcurrent devices and the settings of breaker 2D-0232 per ER 003240E201 are below the level of detail mentioned in the Operating License documents. This change will not require a change to the Operating License.

2. Will the proposed activity result in the SAR documents (including drawings and text) being no longer true or accurate, or violate a requirement stated in the document?

Unit 2 SAR figure 8.3-16 sh. 1A (E-2017 sh. 1A) will be changed to reflect the trip size changes to 2D-0232. The changes made per ER 003240E201 are below the level of detail of the remaining SAR documents. No other changes to the SAR documents are required. This change will not result in any SAR documents being no longer true or accurate and no requirements stated in the SAR will be violated. An LDCR has been submitted with ER 003240E201 to revise the Unit 2 SAR Figure 8.3-16 sh. 1A (E-2017 sh. 1A).

3. Will the proposed activity involve a test or experiment not described in the SAR?

ER 003240E201 does not involve any tests or experiments not described in the SAR. The test described in this package involves testing proper operation of components that are operating in accordance with approved plant procedures. This package does not require any unusual operating conditions or startup tests. This testing does not include tests and experiments that could degrade the margins of safety during normal operations or anticipated transients or degrade the adequacy of structures, systems, or components to prevent accidents or mitigate accident consequences and are not described in the SAR.

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This Document contains 1 Page.

Document No. ER 003240E201 Rev./Change No. 00 10CFR50.59 Eval. No. FFN#00-139
 (Assigned by PSC)
 Title 2D232 Breaker Long Time / Short Time Overcurrent Tripping Device Replacement

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- | | | |
|--|------------------------------|--|
| 1. Will the probability of an accident previously evaluated in the SAR be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 2. Will the consequences of an accident previously evaluated in the SAR be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 3. Will the probability of a malfunction of equipment important to safety be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 4. Will the consequences of a malfunction of equipment important to safety be increased? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 7. Will the margin of safety as defined in the basis for any technical specification be reduced? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |

<u><i>Robert J. Buser</i></u> Certified Reviewer's Signature	Robert Buser Printed Name	11/15/2000 Date
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Reviewer's certification expiration date: 04/07/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

PSC review by: *DB* Date: 11/16/00

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Document No. ER 003240E201

Rev./Change No. 00

10CFR50.59 Review Continuation Page

Evaluation Continuation

Summary:

During testing of U2 125 VDC breaker 2D-0232 the breaker tripped outside of the allowable range. After performing maintenance on the trip devices, the devices performed erratically. Breaker 2D-0232 is a Westinghouse DB25, 600-amp frame, 400-amp trip DC breaker with long time and short time overcurrent trip devices set at 320 amps pickup. There are no spare long time/short time overcurrent devices of this exact size available. Breaker 2D-0232 feeds 1E 125 VDC panel 2D22. Panel 2D22 supplies non-1E loads through 1E breakers. Breaker 2D-0232 is the second 1E breaker in series, which provides separation between the non-1E loads and the 1E power source per the requirements of the U2 SAR. Per ER003240E201, the 400-amp long time/short time overcurrent trip devices will be replaced with spare 225-amp long time/short time overcurrent devices in 2D-0232. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. After installation, testing will be performed to verify proper operation of the breaker and trip devices. All testing related to ER 003240E201 will be performed with the affected equipment inoperable.

1. Will the probability of an accident previously evaluated in the SAR be increased?

Chapter 15 of the Unit 2 SAR was reviewed for accidents related to the Unit 2 DC system. Section 15.1.31 of the Unit 2 SAR addresses "Loss of One DC System". The changes made per ER 003240E201 will not increase the probability of a loss of one DC system. Per ER003240E201, the 400-amp long time/short time overcurrent trip devices will be replaced with spare 225-amp long time/short time overcurrent devices in 2D-0232. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. No other accidents previously evaluated in the SAR were affected by ER 003240E201. The probability of an accident previously evaluated in the SAR will not be increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

Per ER003240E201, the 400-amp long time/short time overcurrent trip devices will be replaced with spare 225-amp long time/short time overcurrent devices in 2D-0232. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. These changes to breaker 2D-0232 will not affect the offsite dose consequences of any previously analyzed accident.

3. Will the probability of a malfunction of equipment important to safety be increased?

Breaker 2D-0232 supplies 125VDC power to panel 2D22 only. Panel 2D22 does not supply any safety related loads. Per ER003240E201, the 400-amp long time/short time overcurrent trip devices will be replaced with spare 225-amp long time/short time overcurrent devices in 2D-0232. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. Breaker sizing and settings are still sufficient for connected load (2D22) and interrupting capability remains unchanged. ER003240E201 does not affect the probability of a malfunction of equipment important to safety.

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Document No. ER 003240E201Rev./Change No. 0010CFR50.59 Review Continuation Page**Evaluation Continuation**

4. Will the consequences of a malfunction of equipment important to safety be increased?

Breaker 2D-0232 supplies 125VDC power to panel 2D22 only. Panel 2D22 does not supply any safety related loads. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. ER 003240E201 will not affect the onsite or offsite dose consequences of a malfunction of equipment important to safety.

5. Will the possibility of an accident of a different type than previously evaluated in the SAR be created?

Section 15.1.31 of the Unit 2 SAR has previously evaluated the loss of one DC system. All failures related to 2D-0232 are bounded by this previously analyzed accident. Changes made to breaker 2D-0232 per ER 003240E201 will not affect the required functions of this breaker in the DC system. No new accidents of a different type than those already evaluated in the Unit 2 SAR will be created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than previously evaluated in the SAR be created?

Table 8.3-11 of the Unit 2 SAR evaluates failure analysis for the 125 volt DC system. No new failure modes have been created for the 125 VDC system per ER 003240E201. The failure modes for breaker 2D-0232 remain unchanged by ER 002340E201. Breaker 2D-0232 supplies 125VDC power to panel 2D22 only. Panel 2D22 does not supply any safety related loads. Breaker setpoints will allow for adequate cable protection between 2D-0232 and 2D22 and will improve tripping selectivity with upstream and downstream breakers. This ER will not create the possibility of a malfunction of equipment important to safety of a different type than previously evaluated in the SAR.

7. Will the margin to safety as defined in the basis of any technical specification be reduced?

Breaker settings and overload devices for 2D-0232 are below the level of detail of the basis for any Unit 2 technical specifications. No margin to safety as defined in the basis of any technical specification will be affected by changes per ER 003240E201. No fission product barriers are affected by changes per ER 003240E201.

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This Document contains 3 Pages.

Document No. ER 003251E201 Rev./Change No. 0

Title Remove Packing Leakoff Lines from 2CV-4651 & 2CV-4652

Brief description of proposed change:

This ER authorizes the removal of the packing leakoff lines, installation of a seal-welded stainless steel plug, and changes to the quantity and configuration of the packing within the stuffing box for both 2CV-4651 and 2CV-4652. The leakoff lines will be removed back to the nearest common junction and plugged. Valve performance is verified per normal MOV testing methods. The valves will be inspected at conditions near normal operating pressure to verify no leakage from either the leakoff connection plug or the valve packing.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
 - QAPM? Yes No
 - E-Plan? Yes No
8. Does this review depend on future NRC approval of other actions?
(NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.
1000.131A

REV.
003-04-0

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Document No. ER 003251E201

Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

FORM TITLE:

10CFR50.59 SAFETY EVALUATION

FORM NO.
1000.131B

REV.
003-04-0

This Document contains 1 Page.

Document No. ER 003251E201

Rev./Change No. 0

10CFR50.59 Eval. No.
(Assigned by PSC)

FFN #
00-143

Title Remove Packing Leakoff Lines From 2CV-4651 & 2CV-4652

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No
2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No
3. Will the probability of a malfunction of equipment important to safety be increased? Yes No
4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No
5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No
6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No
7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

Iver J. Jacobson
Certified Reviewer's Signature

Iver J. Jacobson
Printed Name

11/18/00
Date

Reviewer's certification expiration date: 1/26/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
<u>N/A</u>		

PSC review by: [Signature]

Date: 11/18/00

FORM TITLE:

10CFR50.59 REVIEW CONTINUATION PAGE

FORM NO.
1000.131CREV.
003-04-0

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1. The probability of an accident previously evaluated in the SAR is not increased by the changes authorized with this ER. The only potentially affected accident is the LOCA (Sec. 15.1.13). The probability of a failure of the spray valve's pressure boundary is not increased. The packing leakoff connection is being plugged and seal welded. The plug material and weld processes are consistent with the design requirements for the RCS and do not increase the potential for failure.

The potential to indirectly degrade the RCS pressure boundary via boric acid corrosion from packing gland leakage is not believed to be credibly increased. The packing gland and leakoff plug will be inspected to verify no leakage at pressures near normal operating conditions. The potential for packing leaks is actually reduced by changing from two sets of packing to one. However, removal of the intermediate leakoff path may to some extent increase the potential for packing leakage to enter the reactor building. Thus, the higher probability for packing leakage into the leakoff line has been replaced with a much lower overall probability for leakage that would be directly into the reactor building. If packing leakage is assumed, the potential for it to degrade carbon steel components such as seismic pipe supports or other carbon steel materials in the vicinity does exist. The potential for significant packing leakage has not been created by this change. Small amounts of leakage, while not expected, would be in the form of steam or would boil off on top of the valve bonnet vs. dripping on other components or items. The valves, their structural and pressure boundary fasteners and the adjoining piping are all made of stainless steel materials and are not subject to boric acid corrosion. In conclusion, the probability of degrading a carbon steel support or other equipment to such an extent that RCS pressure boundary failure occurs is not being increased.

2. The offsite dose consequences of evaluated accidents will not be increased. The function and operation of safety related equipment used to mitigate accident consequences is not being affected. Operating limits and initial conditions that could affect accident dose consequences are likewise unaffected by this change. The packing leakoff line is not a barrier that mitigates dose and no new pathways for radioactive material release are created. Access to vital areas is not affected by the packing arrangement on the pressurizer spray valves. The existing dose consequence assumptions for the evaluated accidents will remain bounding.

3. The probability of a malfunction of equipment important to safety is not increased. Operation and reliability of the pressurizer spray valves is not changed or degraded as a result of this ER. The packing leakoff connections for the valves are being plugged and seal welded. The plug material and weld processes are consistent with the design requirements for the RCS and do not increase the potential for valve failure.

The potential to cause a malfunction of other equipment important to safety via boric acid corrosion from packing gland leakage is not credibly increased. The packing gland and leakoff plug will be inspected to verify no leakage at pressure near normal operating conditions. The potential for packing leaks is actually reduced by changing from two sets of packing to one. However, removal of the intermediate leakoff path may to some extent increase the potential for packing leakage to enter the reactor building. Thus, the higher probability for packing leakage into the leakoff line has been replaced with a much lower overall probability for leakage that would be directly into the reactor building. If packing leakage is assumed, the potential for it to degrade carbon steel components such as seismic pipe supports or other carbon steel materials in the vicinity does exist. The potential for significant packing leakage has not been created by this change. Small amounts of leakage, while not expected, would be in the form of steam or would boil off on top of the valve bonnet vs. dripping on other components or items. The valves, their structural and pressure boundary fasteners and the adjoining piping are all made of stainless steel materials and are not subject to boric acid corrosion. In conclusion, the probability of causing a malfunction of equipment important to safety due to packing leakage from the pressurizer spray valves is not being increased.

4. The offsite dose consequences of a malfunction of equipment important to safety will not be increased by the activities authorized by this ER. The consequences of failure of the spray valves or any other SSC important to safety will remain unchanged. There are no new operating conditions or failure modes created by plugging the packing leakoff connection for the spray valves that will affect radiological release conditions.

FORM TITLE:

10CFR50.59 REVIEW CONTINUATION PAGE

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003-04-0

5. The probability of a new or different type accident not bounded by analysis for the evaluated accidents is not being created. The changes authorized by this ER affect the pressurizer spray valves in the reactor coolant system. The current LOCA analysis in the SAR will remain applicable and bounding for conditions following removal of the packing leakoff connection for the spray valves.
6. This ER authorizes plugging the leakoff connections for the pressurizer spray valves. This activity does not result in changes that create the possibility of a different type malfunction of equipment important to safety. The results of a malfunction of the pressurizer spray valves or other SSC will not be changed and the existing analysis in the SAR will remain bounding.
7. The margins of safety defined in the technical specifications will not be reduced. There are no margins of safety affected by the packing leakoff lines for the pressurizer spray valves. The technical specification bases do contain margins of safety such as pressurizer pressure that can be affected by the spray valves. However, the stated margins are not being changed, nor is the spray valve's ability to function properly to meet those margins.

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This Document contains 4 Pages.

Document No. ER003261E201 Rev./Change No. 0

Title Evaluate venting 2P-39 for GL96-06 thermal expansion pressure relief.

Brief description of proposed change:

ER003261E201 provides the necessary engineering documentation to vent penetration 2P-39 to the quench tank or reactor drain tank via opening 2CV-4685 or 2CV-4693 respectively, during normal operations. This ER justifies changing P&ID M-2230, sheet 2 to show 2CV-4693 normally open. (The penetration was identified by the GL96-06 review as potentially susceptible to overpressure during a LOCA.)

Venting the penetration will avoid having to install a GL96-06 thermal relief valve between the CIVs.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Operating License?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Confirmatory Orders?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Core Operating Limits Report?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Fire Hazards Analysis?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Bases of the Technical Specifications?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Technical Requirements Manual?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
NRC Safety Evaluation Reports?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAPM?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
E-Plan?	ER 003261E201 PAGE 3 OF 37	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

Document No. ER003261E201 Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

- 1) A search of the licensing bases documents did not identify any changes. The open/closed status of 2CV-4685 or 2CV-4693 is beyond the level of detail of those documents.
- 2) The only document identified by the search that listed the valves or impact to the valves was SAR figure 5.1-3. This figure will be revised to show 2CV-4693 open. The operation and design bases of this valve were not specifically discussed by any of the documents listed in question 2. The Core Operating Limits Report, Fire Hazards Analysis, Technical Requirements Manual or NRC Safety Evaluation Reports are not impacted, and require no revision due to the implementation of the proposed change. Other than Figure 5.1-3, no information in the SAR documents will be untrue or inaccurate or violate any requirements due to this change.
- 3) The guidance in attachment 2 was reviewed. Changing the state of the control valve to vent the penetration to the quench tank or reactor drain tank does not constitute a test or experiment. There are no tests or experiments as described in the SAR regarding the proposed change.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # ____ (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS: ANO-2 50.59	(2CV4685*) (2CV-4693*) (2CVC0078*) (2CVC0079*) (2T0042*) (2P0039*) (2CV4693*) (Penetration*), (Overpressure W/10 Penetration), (Containment), (Relief), (Thermal W10 Relief), (Isolat* W/20 Penetration), (Leakage), (Containment Maintenance), (Liner), (GDC) (double isolation) (penetration w/10 pressure) (second boundary), (quench tank), (makeup water), (GL96-06)

MANUAL SECTIONS: ANO Unit 2 FSAR Sections: 3.9.2 (ASME Code Class 2 and 3 components), 6.2.4 (Containment Isolation Systems), 15 (Accident Analysis) FSAR Tables: 3.8-1, 3.9-2, 3.9-3, 6.2-26

FIGURES: Figures: 5.1-3, 9.3-4, 11.2-1,

	William R. Rowlett, Jr.	11/19/2000
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 05/25/2001

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Assistance provided by:

Printed Name	Scope of Assistance	Date
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Document No. ER003261E201

Rev./Change No. 0

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

John Richardson
Certified Reviewer's Signature

John Richardson
Printed Name

11-27-2000
Date

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

003-04-0

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Document No. ER003261E201

Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

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5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

The temp filter medium will be located in the filter housing upstream of the installed roughing filter, HEPA filter bank and Carbon Filter. The temp filter medium is similar to the roughing filter medium and does not pose a fire threat or significant increase any seismic loading. The installation of the temp filter medium does not affect the operation of the Containment Purge System. Therefore, the possibility of a different accident type is not created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

The roughing filter is not safety-related or seismic class I. The fan and filter housing is downstream of the safety-related isolation equipment. The differential pressure across the temp filter medium and the roughing filter will be maintained within the operational requirements of the roughing filter. The additional filter medium can not affect the system in any new way that is not already present with the installed roughing filter. Therefore, the possibility or a malfunction of equipment important to safety of a different type will not be created by installing the temp filter medium.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

The isolation function of the Containment Purge System will be unchanged by the installation of the temp filter medium. The Containment Purge system has no affect on the Fuel Cladding or RCS Boundry. Therefore, the installation of the temp filter medium will not reduce the margin of safety in the bases of the tech specs.

 _____ **Steve Bonner** _____ **9/26/00** _____
 Certified Reviewer's Signature Printed Name Date

Reviewer's certification expiration date: 8/3/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
<u>N/A</u>		

PSC review by:  _____ Date: 9/26/00

58

Document No. ER973608N201Rev./Change No. 0Title PPS Indefinite Bypass

Brief description of proposed change:

1. Chapter 15 failure of a DC bus (FODCB) ~~analysis~~ ^{analysis} is to be revised to reflect de-energization of one power train/division including:

- ◆ 125 VDC
- ◆ 4160 VAC
- ◆ 480 VAC
- ◆ 120 VAC (2RS1&2RS3 or 2RS2&2RS4)

1.1. FODCB as initiator

This activity revises the SAR to reflect the failure scenario identified in CR-2-96-0293. This scenario assumes failure of a DC bus causes a secondary plant trip. The secondary plant trip causes de-energization of offsite power to one power train and the loss of DC causes failure of the onsite power for one power train. As an initiator the de-energization of one pair of UPSs results.

1.2. FODCB as a single failure with accident

The FODCB would have to occur prior to safety bus energization by offsite bus transfer or prior to safety bus energization by the EDG. Vulnerability is limited to time from initiation of the accident to time for safety bus response to the secondary plant and RPS trips. Without the de-energization of two UPSs, this would result in de-energization of motive power to one actuation train. The second actuation train along with the PPS would remain fully functional.

2. For single channel narration, the SAR will be revised to reflect:

2.1. PPS functions with increasing signal setpoints:

- ◆ Measurement channel does not fail safe on loss of power to the instrument loop (excludes the bistable).
- ◆ After installation of this modification, loss of power to/from a channel A or D bistable power supply will result in tripping of all bistables in the channel.
- ◆ With de-energization of 120 VAC to a measurement channel (bistable and instrument loop), channel A or D will trip and B or C will fail inoperable.

2.2. With the exception of RAS, PPS functions with decreasing signal setpoints:

- ◆ Channel trips on loss of power to the instrument loop (excludes the bistable)
- ◆ After installation of this modification, loss of power to/from a channel A or D bistable power supply will trip the associated channel (all functions).
- ◆ With de-energization of 120 VAC to a measurement channel, the channel will trip.

2.3. RAS response:

- ◆ Channel A or D trips on loss of single channel power to the instrument loop. Channel B or C does not trip on loss of single channel power to instrument loop (auctioneered power supplies).
- ◆ After installation of this modification, loss of power to/from a channel A or D bistable power supply will trip the associated channel.
- ◆ With de-energization of 120 VAC to a measurement channel B or C, the channel remains functional.

3. SAR chapters 3 and 7 will be revised to address PPS system modified response to the single failure event, DC bus de-energization resulting in failure of 120 VAC to channel 1 and 3 or to channels 2 and 4.

3.1. Measurement Channels

Measurement channels consist of a process loop with power supply and the bistable that has auctioneered power supplies. The measurement channels that have bistables with increasing signal setpoints require modification to ensure system level safe response to de-energization of the UPS 120 VAC power source.

For PPS channels A and D, the bistable auctioneered power supply located in the adjacent channel will be spared.

- 3.1.1. Channel A bistable power supply PS3 located in channel B will have both input and output power wiring lifted.
- 3.1.2. Channel D bistable power supply PS6 located in channel C will have both input and output power wiring lifted.
- 3.1.3. PS3 and PS6 power supply trouble alarm output contacts will be defeated.
- 3.1.4. PS1 located in channel A and PS8 located in channel D will power the bistables in the associated channel.

3.2. Matrix Logic

The ESFAS matrix logic has two power supplies. Each power supply has a pair of matrix relays assigned to each load group/ power train. (1 & 3) or (2 & 4). De-energization of a power supply results in a half trip for the matrix. No modifications are required to maintain operability of the matrix logic for de-energization of a pair of UPS.

The RPS matrix logic is similar to the ESFAS matrix logic with the following exceptions. First the power supplies are not assigned to a power train. Second the relays are paired (1 & 2) or (3 & 4)

3.3. Initiation Logic

The PPS initiation logic consist of single power supplies, one per channel, in series with contacts from the six matrices and a trip path output relay coil.

3.4. Actuation Logic

The initiation logic output (trip path relays) are arranged in a selective logic configuration. For a RPS trip, logic is (TP1 or TP2) and (TP3 or TP4) (TPs de-energize). Note the TP number corresponds to its power source channel. For the RPS de-energization of UPS pair 1&3 or 2&4 results in a trip response.

The initiation logic output (trip path relays) are arranged in a selective logic configuration for ESFAS. The logic is (TP1 or TP3) and (TP2 or TP4) for ESFAS (TPs de-energize to safe position). For the FODCB de-energization of 1&3 or 2&4, ESFAS generates a half-leg trip.

The ARCs (2C39 and 2C40) actuation logic for MSIS, EFAS1 and EFAS2 interposing relays will be changed from single trip path actuation to selective 2 out of 4 trip path (TP) logic. The MSIS interposing relay will be wired the same as other MSIS subgroup relays. EFAS1 and EFAS2 actuation logic will be wired such that (TP1 or TP3) and (TP2 or TP4) will de-energize the interposing relays to provide an open demand to the EFW pump discharge valves. (TP1 and TP3) or (TP2 and TP4) will energize the interposing relays to provide a close demand to the EFW pump discharge valves.

3.4.1. Wiring changes to incorporate the selective logic actuation of EFAS1 and EFAS2 interposing relays defeat the existing control front panel actuation alarm for de-energization of an EFAS lockout relay or an interposing relay. For each EFAS function, normally open contacts from the two interposing relays and the two lockout relays will be wired in series with the coil of a relay located on DEFAS subpanels. The subpanel relay contacts will be used to maintain existing control alarm monitoring.

3.4.2. EFAS actuation interconnection with DEFAS will be rewired such that either interposing relay or either lockout relay de-energization will block DEFAS. The change in DEFAS blocking results from simplification of the alarm wiring changes.

- 4. SAR chapter 7 will be revised to apply Tech Spec 3/4.3 breakdown of PPS into parts.
 - 4.1. EFAS - measurement channel, matrix logic, initiation logic, and actuation logic.
 - 4.2. RPS - measurement channel, matrix logic, initiation logic.

Will the proposed Activity:

- 1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?

Yes No

Operating License?

Yes No

Confirmatory Orders?

Yes No

Form Title

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REV

3 - PC-1

2. Result in information in the following SAR documents (including drawings and text) being
(a) no longer true or accurate, or (b) violate a requirement stated in the document:
- SAR (multi-volume set for each unit)? Yes No
- Core Operating Limits Report? Yes No
- Fire Hazards Analysis? Yes No
- Bases of the Technical Specifications? Yes No
- Technical Requirements Manual? Yes No
- NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental
Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities
utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents
per Section 6.1.7?
- QAMO? Yes No
- E-Plan? Yes No

Document No. ER973608N201

Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

1. The Operating License does not contain the level of design detail being modified by this NCP. The level of information contained in the Operating License remains unchanged.
2. (SER)The plant response was acceptable until the operating license was modified to allow indefinite channel bypass of a PPS measurement channel. The application for the Tech Spec change for indefinite bypass does not recognize failure of one power train including two UPSs as a credible event. The application further concludes that RAS and EFAS would remain functional if loss of a pair of UPSs occurred. Two channels of EFAS would have been rendered inoperable. The application errors in that EFAS does not auctioneer power supplies for the steam generator level input to the PPS. Second, the application fails to recognize that ESFAS functions, including EFAS, applying an increasing signal are rendered inoperable. The process instrument loops fail low with de-energization, the bistable remains powered by auctioneered supplies, and the overall measurement channel is thus rendered inoperable.
3. The NCP will be installed and tested during plant modes where the PPS is not required to be operable. Installation plan and startup workplans will address the specifics of the required testing and system isolation requirements.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____. (If checked, note appropriate item #, send LCD to Licensing).

Search Scope:

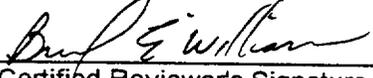
List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

Document Section

LRS: Uninterruptable power w/10 power system, vital AC system w/10 2RS1, 2D01, 2D02, 2RS1, 2RS2, 2RS3, 2RS4, unit trip w/10 transfer, measurement channel, initiation channel, engineered safety features actuation system, matrix logic, vital instrument power supply, ESFAS, RPS, PPS, plant protection system.

MANUAL SECTIONS: Chapter 7, Chapter 8, Section 3.1, Section 15.1.31

FIGURES: All chapter 7

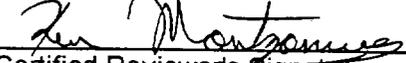
	Burl E. Williams	3/25/98
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 5/03/2001

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	Ken Montgomery	9-16-99
Certified Reviewer's Signature	Printed Name	Date

Form Title	FORM NO.	REV
10CFR50.59 DETERMINATION	1000.131A	3 - PC-1,2

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER973608N201Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

YesNo

- | | | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

Document No. ER973608N201

Rev./Change No. 0

10CFR50.59 Eval. No. FFN# 00-042

(Assigned by PSC)

Title PPS Indefinite Bypass

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- 1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No
- 2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No
- 3. Will the probability of a malfunction of equipment important to safety be increased? Yes No
- 4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No
- 5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No
- 6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? ^{*} Yes No
- 7. Will the margin of safety as defined in the bases for any technical specification be reduced? Yes No

Burl E. Williams

Certified Reviewer's Signature

Burl E. Williams

Printed Name

3/25/98

Date

Reviewer's certification expiration date: 5/3/2001

Assistance provided by:

Printed Name

Scope of Assistance

Date

PSC review by: *[Signature]*

Date: 6/1/00

Manager's note: *it should be clarified that this "change to the facility" and the associated changes to the SAR does not create possibilities of malfunctions of a different type. The change package will resolve the problems previously identified. A SAR change will be submitted that modifies the licensing basis. however, these matters have already been submitted to NRC and approved as amendment 201 (2CNA029904). therefore, further NRC approval is not required. The "USQ" has essentially been previously identified and appropriately dispositioned. [Signature] 12/8/99*

Each question discussion is in outline form corresponding to the description of change. Where applicable, channel bypass status is considered in worse case condition.

1. Will the probability of an accident previously evaluated in the SAR be increased?
 - A. **Chapter 15 analysis for failure of DC bus (FODCB) may result in de-energization of one power train/division including two channels of vital AC.**
 1. FODCB as initiator
SAR section 15.1.31 "LOSS OF ONE DC SYSTEM" analyzes this event and its causes. The causes for the FODCB are DC leg to leg fault in the bus or in the power distribution circuit from the battery. Since this activity has no impact on the accident initiators, the frequency of occurrence is not changed.
 2. FODCB as a single failure with accident
The FODCB would have to occur prior to safety bus energization by offsite bus fast transfer or prior to safety bus energization by the EDG. Vulnerability is limited to time from initiation of the accident to time for safety bus response to the secondary plant and RPS trips. This event is considered a "smart failure" and is not considered credible for de-energization of the two UPS channels.
 - B. **Measurement channel response to loss of vital AC.**
 1. **PPS functions with increasing signal setpoints.**
De-energization of a single channel either results in failure of the channel (B or C) to a non-tripped state or in failure of a channel (A or D) to a tripped state. Neither of these failures impacts accident initiation. Only single channel trip initiators/causes has been increased for channels A and D. In general, causes have increased from failure of dc to dc converter circuits to include the single channel bistable power supply and vital 120 VAC.
 2. **PPS functions with decreasing signal setpoints:**
De-energization of channel A, B, C, or D instrument inputs or channel A or D bistable power supply results in a channel trip. De-energization of a channel B or D bistable power supply does not result in a channel trip.

These single measurement channel de-energization events result in either a single channel trip or inoperability of a single channel. The PPS two out of three logic design with a channel bypassed ensures operability with a single channel failure. Neither condition impacts an accident initiator frequency. Frequency of Inadvertent Operation of ECCS During Power Operation will not change as a result of single channel de-energization.

- C. **PPS response to failure of 120 VAC to either red train channel 1 and 3 or to green train channels 2 and 4.**
A FODCB results in an automatic RPS trip as a result of de-energization of channels A & C or B & D. The trip results from either the CPC channel trips or de-energization of RPS trip paths 1 & 3 or 2 & 4. This RPS response has not been changed by this activity. The paper plant response is being updated by this activity.

A FODCB also results in an automatic ESFAS initiation for those functions with decreasing signal setpoints. For those functions with an increasing signal setpoint, one channel trips and one channel becomes inoperable leaving two channels operable. One out of one logic results with one channel in bypass. The physical plant response is being modified to ensure system level operability.
 1. **Single power source for PPS channels A and D bistables.**
Auctioneered power supplies for channel A and D are being modified to single power source for each of these two channels. Single channel trips will result for all PPS functions in channels A or D for loss of its single channel bistable power source. Channels B and C auctioneered power supplies remain unchanged to maintain RAS response to a FODCB. RWT level channel, A or D, presently trips with a FODCB, channel B and C measurement

channels have auctioneered power supplies for both the instrument loops and the bistables. Inadvertent RAS actuation initiators and response remains "as is".

2.

Selective logic for MSIS, EFAS1 and EFAS2 interposing relays.

Interposing relay actuation logic has changed from single trip path to selective trip path (initiation) logic. This change insures EFW discharge valves will receive an automatic open or close demand based of steam generator level and pressure demands despite de-energization of either or both trip path power sources associated with one trip leg of MSIS, EFAS1 or EFAS2 actuation logic.

a) **EFAS1 and EFAS2 actuation alarm**

The alarm circuit change is independent of accident initiators.

b) **DEFAS block.**

Actuation of EFAS1 and EFAS2 blocks DEFAS when EFAS1 or EFAS2 is initiated by the PPS. With the revised selective logic de-energization of an EFAS interposing or lockout relay maintains the design requirement to block DEFAS.

D. **SAR application TS3/4.3 breakdown of PPS into parts - measurement channel, matrix logic, initiating logic, and actuation logic.**

The administrative revision to the organization of the SAR discussion has no impact on frequency of accident initiators.

E. **Summary**

A FODCB results in an fail safe RPS trip and inadvertent fail safe ESFAS actuations of MSIS, SIAS, and CCAS. These activities will not change an accident initiator for the physical plant. Only single channel trip initiators have increased for channel A and D. The increased channel trip causes are off set by maintaining operability of other ESFAS functions by tripping channel A or D during a FODCB event. Frequency of Inadvertent Operation of ECCS during Power Operation will not change as a result of single channel de-energization.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

A. **Chapter 15 analysis of a DC bus de-energization may result in de-energization of one power train/division including two channels of vital AC.**

1. **FODCB as initiator**

The effects of the FODCB are being revised to assume secondary plant trip that results in de-energization of one power train. The existing analysis consequences, "The remaining DC system will allow a safe shutdown of the plant during emergency conditions.", remains unchanged. The FMEA is being revised to include de-energization of a pair of vital AC instrument channels. De-energization of two vital AC sources has not been previously documented as a design bases event. Note RWT level instrument inputs to the PPS were revised as a result of the original licensing process for this scenario. (Ref A-CE-4187 and A-IPE-1137)

Certain modifications to ensure the PPS automatic response with de-energization of two channels of vital AC are required to ensure the stated consequence is accurate with a PPS channel bypassed in the non-faulted train. Failure of two vital AC buses was not previously considered.

2. **FODCB as a single failure after an accident**

Vulnerability is limited to the time between initiation of an accident and the safety bus response to the secondary plant and RPS trips. This event is considered a "smart failure" and is not considered credible for de-energization of a pair UPS channels. To de-energize a pair, the FODCB would have to occur prior to safety bus energization by offsite bus fast transfer or prior to safety bus energization by the EDG.

With the above consideration, the plant response amounts to de-energization of motive power to one train of actuation equipment. Since the PPS and one train of accident mitigation equipment remains functional, the consequences of a previously evaluated accident has not changed.

B. **Measurement channel response to loss of vital AC.**

The PPS logic is a two out of four measurement channel coincidence logic design. With a channel in bypass, the system reverts to two out of three logic. A single channel failure converts the logic to two out of two or one out of one logic depending on the function.

1. **PPS functions with increasing signal setpoints.**

For channel B or C de-energization, a single channel fails inoperable. System level functions remain operable with two out of two logic. For Channel A or D de-energization, a single channel trips. System level functions remain operable with one out of two logic.

2. **PPS functions with decreasing signal setpoints.**

For single channel de-energization, a single channel fails safe, tripped, for all functions except channels B and C of RWT level. De-energization of a single power source for channel B or C will not impact RAS system level function since auctioneered power supplies are used. System level functions remain operable with one out of two logic including RAS for Channel A or D.

C. **PPS response to failure of 120 VAC to either red train channels 1 and 3 or to green train channels 2 and 4.**

This event de-energizes two 120 VAC power sources for one train. The RPS fails safe, tripped. SIAS, CCAS, and MSIS fail to their actuated states. Those ESFAS functions with increasing signal setpoints fail safe to a one out of one logic with a channel bypassed in the non-faulted train. If this event occurs as a single failure concurrent with another accident, the accident consequences remains unchanged. The redundant DC system will allow a safe shutdown.

1. **Single power source for PPS channels A and D bistables.**

Single source power to the bistable ensures one channel trips regardless of function. Channel B and D auctioneered power supplies result in inoperability of one channel for

increasing signal to trip functions. This failure to trip is credited for the EFAS1 and EFAS2 feed only good generator (FOGG) logic. EFAS performs two functions: one, to feed based on steam generator water level and two, not to feed a steam generator with low pressure. For this activity, EFAS logic becomes one out of one with a channel bypassed to feed a steam generator and one out of one to isolate or not feed with a channel bypassed. For the feed case channel A or D is tripped to the safe state. For the not to feed case channel B or D is not tripped (failed) to not feed position.

2. **Selective logic for MSIS, EFAS1 and EFAS2 interposing relays.**

To maintain automatic level control, prevent overfilling, and to ensure isolation of a steam generator with a failed secondary pressure boundary, the interposing relay logic was changed from single trip path actuation to each EFW pump discharge valve to selective two out of four trip path logic. This logic ensures the two EFW pump discharge valves in each line will have automatic feed control signals. At least one valve in each path will not have motive power. The normal valve position combined with motive power distribution ensures emergency feedwater control.

This failure concurrent with a main steam line break or loss of main feed water event will not change their consequences. At least one power train of automatic steam generator isolation or emergency feed water actuates as required.

a) **EFAS1 and EFAS2 actuation alarm**

The alarm has no impact on the radiation dose consequences for any analyzed accident.

b) **DEFAS block.**

DEFAS is not a credited system for any SAR analyzed accident.

D. **SAR application TS3/4.3 breakdown of PPS into parts - measurement channel, matrix logic, initiating logic, and actuation logic.**

These administrative enhancements to the SAR discussion of the PPS have no impact on radiation dose consequences.

E. **Summary**

The RPS response to FODCB has not been altered as a result of this activity.

With a PPS channel in bypass, the EFAS accident mitigation system level functions have been altered to restore physical plant response to ensure the documented consequences are not increased. Specifically those functions with increasing signal setpoints will revert to a one out of one logic system. Response of those functions with decreasing signal setpoints are not altered. The EFAS wired measurement channel logic that uses both increasing and decreasing setpoints will respond with one out of one logic. One channel fails to the EFW feed position (A or D), and one channel fails to the FOGG position (B or C). EFAS remains functional at the system level during a FODCB as a result of the activities.

Inadvertent Operation of ECCS During Power Operation will not change as a result of single channel de-energization. ECCS actuation from high containment building pressure will not occur from a single channel or FODCB event - one channel trips, one channel fails inoperable. Accident mitigation functions either fail safe (actuated) or remain functional with one out of one logic with a channel bypassed.

The FODCB analysis has been changed to include failure of two vital 120 VAC channels.

Essentially the plant response to a FODCB as an accident initiator becomes a loss of load and/or turbine trip event.

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3. Will the probability of a malfunction of equipment important to safety be increased?
- A. **Chapter 15 analysis of a DC bus de-energization may result in de-energization of one power train/division including two channels of vital AC.**

1. **FODCB as initiator**

Unit Two was designed with two redundant power trains/divisions. Either train consist of sufficient equipment to accomplish the safety function. The SAR FODCB analysis concludes this. The original analysis does not specifically identify de-energization a pair vital 120 VAC power channels, 1 & 3 or 2 & 4. The two pairs are fully redundant for all two train loads.

Each power train/division has two UPSs that power two channels of vital instrumentation. The two UPSs on each train are independent but not fully redundant. The pair ultimately share common power sources. Each UPS has three power sources: two supply the inverter section - preferred, rectified 480 VAC and battery backed 125 VDC and the second, alternate AC, 480 VAC stepped down to 120 VAC. The two 480 VAC power sources have diverse onsite and offsite sources. The ultimate source for the UPS is the battery backed 125 VDC source.

The FODCB scenario results in loss of 125 VDC to two inverters, to one train of onsite AC power sources, and one train of offsite AC power sources. With the assumption that loss of the 125 VDC causes a secondary plant trip, the three UPS power sources will be de-energized for one pair of inverters.

This activity does not degrade safety system reliability, it recognizes errors in the FODCB analysis that requires PPS modifications to ensure safety system reliable performance.

2. **FODCB as a single failure with accident**

This event is not considered credible in that multiple equipment failures are required with restricted time of susceptibility. This activity has not changed the frequency or causes for de-energization to one pair of UPSs.

B. **Measurement channel response to loss of vital AC.**

1. **PPS functions with increasing signal setpoints:**

The PPS is designed with two out of three logic with a fourth channel in bypass. Single PPS channel failures do not prevent system level safety performance. The deletion of the auctioneered power supplies for channel A or D decreases the probability of a single channel non-safe failure. These channels will fail safe, trip with a single channel power failure to the bistable. Note as with channels B and C, de-energization of the process loop while maintaining the bistable power results in non-safe failure of the measurement channel. Cross channel checks and surveillances are credited for detection of the measurement channel de-energization.

2. **PPS functions with decreasing signal setpoints:**

The probability of a single channel de-energization to a fail safe position has slightly increased for channels A and D. The number of causes for de-energizing a bistable power source has increased by sparing one of the auctioneered power supplies. This is a single channel event.

C. **PPS response to failure of 120 VAC to either red train channel 1 and 3 or to green train channels 2 and 4.**

The probability of failure of the ESFAS to perform its safety function is being decreased by ensuring the FODCB does not place more than one measurement channel in an inoperable condition (non-safe failure). The probability of an EFAS1 and EFAS2 actuation channel failure to maintain steam generator level is being decreased.

1. **Single power source for PPS channels A and D bistables.**
Those ESFAS functions with increasing signal setpoints will respond with channel A or D tripped, channel B or C inoperable, and two channels operable. With a channel in the non-faulted train bypassed the system functions are operable with one out of one logic. The response of those ESFAS functions with decreasing signal setpoints remains unchanged by this activity.
 2. **Selective logic for MSIS, EFAS1 and EFAS2 interposing relays.**
The interposing relays for EFAS1 and EFAS2 will perform their functions without reliance on failing to a safe state. The relays will be actuated by selective trip path logic. Either trip path one and three or trip path two and four remain functional. Either pair are sufficient to feed or terminate emergency feedwater as determined by the four measurement channels. The MSIS interposing relay will be actuated and locked out as any other MSIS subgroup relay. Although the interposing relay was single trip path controlled, the initiation logic locked the relay in its actuated state. The selective logic actuation of the MSIS interposing relays decreases the probability of equipment failures causing erroneous close signals to the associated EFW pump discharge valves. The valve logic is wired such that an EFAS signal overrides the MSIS. Each EFAS measurement channel has wired logic to ensure the EFAS signal is not generated or is removed if previously actuated for a steam generator with a ruptured secondary pressure boundary.
 - a) **EFAS1 and EFAS2 actuation alarm**
Actuation of these alarms will alert operations staff to a range of conditions indicating actuation or certain actuation system troubles.
 - b) **DEFAS block.**
The interface between DEFAS and EFAS is such that the safety system (EFAS) actuation blocks DEFAS. Since DEFAS is power dependent, DEFAS de-energization will have no impact on EFAS actuation.
- D. **SAR application TS3/4.3 breakdown of PPS into parts - measurement channel, matrix logic, initiating logic, and actuation logic.**
This administrative change to SAR chapter 7 to use consistent functional description of the PPS logic has no impact on physical plant equipment performance.
- E. **Summary**
- Over all the ESFAS equipment response to de-energization of a power train will decrease the probability of system level malfunctions to the FODCB scenario. This results from one channel de-energizing to its safe state, one channel failing inoperable, and two channels remaining operable one of which maybe bypassed. ESFAS functions with increasing setpoints remain functional and those functions with decreasing functions actuate from the AC or BD matrix provided neither channel is bypassed.

4. Will the consequences of a malfunction of equipment important to safety be increased?
- A. **Chapter 15 analysis of a DC bus de-energization that may result in de-energization of one power train/division including two channels of vital AC.**
1. **FODCB as initiator**
The FODCB scenario results in loss of 125 VDC to two inverters, to one train of onsite AC power sources, and one train of offsite AC power sources. With the assumption that loss of the 125 VDC causes a secondary plant trip, the three UPS power sources will be de-energized for one pair of inverters. This activity adds the above detail to the existing analysis. When considered as an initiator with certain analyzed accidents, the consequences of de-energization of two PPS channels with a channel bypassed in the non-faulted train **would not have an acceptable** consequences with out certain modifications. See 4.C below.
 2. **FODCB as a single failure with accident**
If one pair of UPS channels is not de-energized, a FODCB results in de-energization of motive power to one train of mitigation equipment. The redundant equipment train is sufficient to prevent changes in the radiation dose result of any accident.
- B. **Measurement channel response to loss of vital AC.**
- Single channel failures of the PPS have no impact on mitigation of radiation dose consequences provided the ESFAS actuate as required at the system level.
1. **PPS functions with increasing signal setpoints:**
Single channel failures to an inoperable state places these functions in a two out of two logic condition with a channel in the non-faulted train bypassed.
 2. **PPS functions with decreasing signal setpoints:**
Single channel failures to its tripped state places these functions in a one out of two logic condition with a channel in the non-faulted train bypassed.
- C. **PPS response to failure of 120 VAC to either red train channel 1 and 3 or to green train channels 2 and 4.**
- Two of the four PPS channels must remain functional or failed to a safe state to prevent potentially increasing the off site dose consequences when considering a FODCB concurrent with an accident.
1. **Single power source for PPS channels A and D bistables.**

Channel A or D fails to a safe state for all functions except EFAS. EFAS fails safe for feeding a steam generator and non-safe for not feeding a ruptured steam generator. Channel B or C fails inoperable for functions with increasing signal setpoints, except EFAS. EFAS fails safe for FOGG logic and non-safe for feeding a steam generator. ESFAS accident mitigation remains capable of initiation or is initiated.
 2. **Selective logic for MSIS, EFAS1 and EFAS2 interposing relays.**
Selective logic actuation of interposing relays ensures the EFW discharge valves receive the appropriate control signal despite de-energization of two measurement channels.
 - a) **EFAS1 and EFAS2 actuation alarm**
These alarms provide actuation channel status for use by operations. The alarm monitors certain equipment failures and annunciates actuations.
 - b) **DEFAS block.**
DEFAS actuation is automatically blocked by EFAS actuation. This action is normal and has no impact on radiation dose releases

- D. **SAR application TS3/4.3 breakdown of PPS into parts - measurement channel, matrix logic, initiating logic, and actuation logic.**
These administrative changes have no impact on radiation dose releases.

E. **Summary**

The failure of one pair of UPSs resulting from a FODCB causes: an RPS trip, actuation of ESFAS functions with decreasing signal setpoints with the exception of RAS, RAS coincidence logic of one out of two, and coincidence logic of one out of one for those ESFAS functions with increasing signal setpoints. The consequences of a FODCB as a single failure with an accident has been reduced by maintaining operability of ESFAS with a channel bypassed in the non-faulted train.

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5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?
- A. **Chapter 15 analysis of a DC bus de-energization may result in de-energization of one power train/division including two channels of vital AC.**
1. **FODCB as initiator**
Although the details are somewhat lacking, a FODCB as an accident initiator was evaluated in the SAR. The potential consequences, de-energization of two UPSs on one power train, was not specifically documented. Historical documents indicate this was considered in the design and licensing of the RWT level measurement channels (RAS). The SAR does not specifically address the scenario of common mode failure of vital instrument AC channel pairs 1 & 3 or 2 & 4.

By design two redundant DC power trains are provided. Either train is capable of performing the DC system safety function. Four independent UPSs instrument power channels are provided. The instrumentation design bases only considers single power channel failures.
 2. **FODCB as a single failure with accident**
For the existing SAR accident analysis, the possibility of de-energization of one pair of PPS channels is not considered credible when the FODCB coinciding with an accident initiation. Vulnerability is limited to time from initiation of the accident to time for safety bus response to the secondary plant and RPS trips. The second actuation train along with the PPS will remain functional after PPS modifications are implemented. See 5.C below.
- B. **Measurement channel response to loss of vital AC.**
TS amendment 159 allows PPS operation with two out of three logic with a fourth channel bypassed. With single failures the logic becomes one out of two or two out of three for single channel failures.
1. **PPS functions with increasing signal setpoints:**
Single channel failures are considered in the SAR.
 2. **PPS functions with decreasing signal setpoints:**
Single channel failures are considered in the SAR.
- C. **PPS response to failure of 120 VAC to either red train channel 1 and 3 or to green train channels 2 and 4.**
RAS system level response to failure of a pair of instrument power channels was addressed during original ANO-2 licensing. Based on the four channel PPS FMEA that does not consider de-energization of two instrument power channels, this failure has not been previously considered. The plant response was acceptable until the operating license was modified to allow indefinite channel bypass of a PPS measurement channel. SER 159 for the Tech Spec change for indefinite bypass does not recognize failure of one power train including two UPSs as a credible event. The Tech Spec change request further concludes that RAS and EFAS would remain functional if loss of a pair of UPS occurred. Contrary to the request, two channels of EFAS would be rendered inoperable. The request errors in that EFAS does not have auctioneer power supplies for the steam generator level input to the PPS. Second, the request fails to recognize that an ESFAS function, including EFAS, that apply an increasing signal is rendered inoperable. The process instrument loops fail low with de-energization, the bistable remains powered by auctioneered supplies, and the overall measurement channel is thus rendered inoperable.
1. **Single power source for PPS channels A and D bistables.**
System level logic for ESFAS functions with increasing signal setpoints including EFAS becomes one out of one with a channel bypassed in the non-faulted train. ESFAS functions with decreasing signal setpoints actuate.
 2. **Selective logic for MSIS, EFAS1 and EFAS2 interposing relays.**
Single trip path failures are considered in the SAR. The selective trip path actuation logic ensures logically correct signals are sent to each valve instead of depending on safe failure states. The EFAS pump discharge valves perform two safety functions: first, to supply

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emergency feedwater based on level and second, to isolate emergency feedwater based on low steam generator pressure or high water level. The selective logic ensures both functions remain operable with a FODCB.

a) **EFAS1 and EFAS2 actuation alarm**

The alarm circuit maintains existing level of actuation and component failure alarm. The alarm circuit will not create an accident.

b) **DEFAS block.**

Blocking of DEFAS does not impact any accident. DEFAS block is part of the actuation interface with EFAS actuation.

D. **SAR application TS3/4.3 breakdown of PPS into parts - measurement channel, matrix logic, initiating logic, and actuation logic.**

This is an administrative change with no impact on accident creation.

E. **Summary**

The PPS modification will ensure acceptable ESFAS response to mitigate an accident with a FODCB. However, the SAR accident analyzes do not document that a pair of vital AC power channels could fail. A single failure of a pair of UPS channels has not been considered with the SAR accidents. Basically, the analyzes assume at least one train of accident mitigation equipment will be actuated and functional with a PPS channel in bypass.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?
- A. **Chapter 15 analysis of a DC bus de-energization may result in de-energization of one power train/division including two channels of vital AC.**
1. **FODCB as initiator**
The analysis does not document failure of a pair of vital instrument AC channels. Neither the 120 volts AC nor the 125 Volt DC system single failure analysis assumes failure of two channels of 120 volts AC. The failure of either pair of 120 VAC instrument buses caused by a FODCB was not created by this activity. This activity recognizes the potential for de-energization of a pair of instrument buses and is updating the documentation and modifying the PPS design to ensure safe plant response.
 2. **FODCB as a single failure with accident**
De-energization of one pair of UPS is not considered as a single failure in the SAR.
- B. **Measurement channel response to loss of vital AC.**
Redundant four channel PPS design ensures safety system response adequate for single channel failures with a channel in bypass.
1. **PPS functions with increasing signal setpoints:**
Single channel failures are addressed by the SAR.
 2. **PPS functions with decreasing signal setpoints:**
Single channel failures are addressed by the SAR.
- C. **PPS response to failure of 120 VAC to either red train channel 1 and 3 or to green train channels 2 and 4.**
This activity identifies a potential failure mode where a pair of 120 VAC channels may fail as a result of a FODCB. Physically this activity does not create this condition, it simply documents the condition and provides corrective actions to ensure safe plant response.
The RPS fails safe with channel trips generated by CPC channels A and C or channel B and D) or as a result of de-energization of trip paths 1 & 3 or 2 & 4.
Those ESFAS functions with increasing signal setpoints remain operable with one out of one logic. One channel trips, one channel is rendered inoperable, and two channels remain functional. One of the operable channels maybe bypassed without impact on operability. The trip response of those ESFAS functions with decreasing signal to trip setpoints remains unchanged.
EFAS coincidence logic to close the EFW discharge valves requires three out of four channels not be in a tripped state. With a FODCB one channel is tripped, one channel is not tripped, and two channels are operable. The close logic becomes two out of two with a FODCB.
1. **Single power source for PPS channels A and D bistables.**
By defeating the auctioneered bistable power supplies, measurement channel A or C will fail safe to its tripped state. This change ensures no more than one channel B or C fails to a non-safe state for the FODCB concurrent with an accident.
 2. **Selective logic for MSIS, EFAS1 and EFAS2 interposing relays.**
With selective logic EFAS pump discharge valves will receive control signals to initiate emergency feedwater and to terminate emergency feedwater flow by open and close demands generated independent of the 120 volt channel pair de-energization.
 - a) **EFAS1 and EFAS2 actuation alarm**
The alarm circuit maintains existing level of actuation and component failure alarm. The alarm circuit monitors trip leg status to alert certain failures.
 - b) **DEFAS block.**
Blocking of DEFAS does not impact any accident. DEFAS block is part of the interface with EFAS actuation.
- D. **SAR application TS3/4.3 breakdown of PPS into parts - measurement channel, matrix logic, initiating logic, and actuation logic.**

This is an administrative change with no impact on equipment malfunctions.

E. **Summary**

The SAR evaluated equipment malfunctions do not include de-energization of two pairs of 120 volt vital AC caused by a FODCB. This activity does not create this condition; however, this activity does recognize the malfunction and proposes to correct the non-safe PPS response to the event. The SAR will be revised to include the FODCB de-energization of a pair of 120 volt vital AC channels and the modified PPS response.

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7. Will the margin of safety as defined in the bases for any technical specification be reduced?
- A. **Chapter 15 analysis of a DC bus de-energization may result in de-energization of one power train/division including two channels of vital AC.**
1. **FODCB as initiator**
Instrumentation BASES, 3/4.3.1 & 3/4.3.2. Operability of the PPS assures sufficient redundancy is maintained to permit a channel to be bypassed. Single failures resulting in failure of more than one channel are not considered. A FODCB concurrent with certain accidents will result in reduction of margin by decreasing the number of operable channels to less than two. This activity will restore the margin by ensuring ESFAS functions remain capable of automatic actuation with a FODCB.
 2. **FODCB as a single failure with accident**
See 7.1.1
- B. **Measurement channel response to loss of vital AC.**
Safety margin is ensured by providing two out of three logic with a single channel bypassed. With two out of three logic assumed in the margin, a single failure would reduce the logic to two out of two.
1. **PPS functions with increasing signal setpoints:**
De-energization of a process instrument loop while maintaining bistable power causes PPS logic to become two out of two with one channel inoperable. De-energization of channel A or D bistable causes PPS logic to become one out of two. De-energization of a single channel B or C bistable power supply while the process instrument loop remains powered causes no PPS logic change.
 2. **PPS functions with decreasing signal setpoints**
Channel A or D bistable de-energization or de-energization of the process instrument loop causes the PPS logic to become one out of two. De-energization of a single channel B or C bistable power supply has no impact on PPS logic.
- C. **PPS response to failure of 120 VAC to either red train channel 1 and 3 or to green train channels 2 and 4.**
For ESFAS functions with increasing signal setpoints, PPS logic for FODCB becomes one out of one. Channel A or D will de-energize to the tripped state and channel C or B fails inoperable. For ESFAS functions with decreasing signal setpoints, the functions are actuated by the AC matrix or BD matrix.
1. **Single power source for PPS channels A and D bistables.**
Single channel bistable power ensures at least one channel fails to the tripped state. Auctioneered bistable power supplies and process instrument loops for channels B and C ensure RAS remains operable.
 2. **Selective logic for MSIS, EFAS1 and EFAS2 interposing relays.**
 - a) **EFAS1 and EFAS2 actuation alarm**
These alarms provide certain on line component monitoring functions that ensure inadvertent actuations will not occur during PPS matrix testing. Essentially these alarms ensure that the two trip legs are energized.
 - b) **DEFAS block.**
No associated TS bases was indentified.
- D. **SAR application TS3/4.3 breakdown of PPS into parts - measurement channel, matrix logic, initiating logic, and actuation logic.**
The SAR discussion has been administratively aligned for closer agreement with the TS bases definitions of the various PPS functions (channels).
- E. **Summary**
The TS bases assumes two out of three logic with a fourth channel bypassed. With a single channel

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failure the system will remain operable with two out of two logic. In the case of the FODCB, the systems either actuate or remain functional. With a channel bypassed in the non-faulted train (worse case) the functions with increasing signal setpoints will remain functional with one out of one logic.

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10CFR50.59 DETERMINATION

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3 PC-1

This Document contains 3 Pages.

Document No. ER 973854N201

Rev./Change No. 0

Title SU/BD DI Sample to On-line Ion Chromatograph

Brief description of proposed change:

The purpose of this nuclear change is to improve the mass balance analyses on the on-line Ion Chromatograph.

This nuclear change will: 1) provide direction for the installation of an additional sample point tie-in to the ion chromatography system (ER 980640N201). This additional sample point will permit sampling the water downstream of Heater Drain Pumps 2P-8A/B.

This nuclear change will also: 2) provide instructions for installing SS tubing and valve upstream of the suction to Pump 2P-74 (ER 973954N201). Pump 2P-74 is the SU/BD DI's Sample Booster Pump. Pump 2P-74 currently provides water downstream of demineralizers 2T-94A/B to the Ion Chromatograph. This modification will permit sampling the water upstream of demineralizers 2T-94A/B.

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Will the proposed Activity:

1. Require a change to the Operating License including:

- Technical Specifications (excluding the bases)? Yes No
- Operating License? Yes No
- Confirmatory Orders? Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

- SAR (multi-volume set for each unit)? Yes No
- Core Operating Limits Report? Yes No
- Fire Hazards Analysis? Yes No
- Bases of the Technical Specifications? Yes No
- Technical Requirements Manual? Yes No
- NRC Safety Evaluation Reports? Yes No

3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance)

Yes No

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAMO? Yes No

E-Plan? Yes No

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Basis for Determination (Questions 1, 2, & 3): NC 973954N201
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QUESTION 1

A review of the Unit 1 and Unit 2 Technical Specifications, Operating License, and Confirmatory Orders using LRS and a Hard Copy of these documents did not reveal any sections that would be affected by the addition of the two sample points to the Ion Chromatography system for mass balance analyses.

QUESTION 2

SAR figures 10.4-7, 9.3-9 and section 9.3.2.2.2 will have to be changed to reflect the changes. The SAR figures will be updated to show the new sample lines. Section 9.3.2.2.2 will add verbiage to include Heater drains and S/U BD DI inlet to On-Line ion Chromometer.

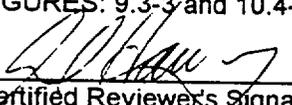
QUESTION 3

Installation of two sample points to the Online Ion Chromatograph system and the addition of tubing/tubing valves to the S.U./ Blowdown Demineralizer system and the sample lines from Heater Drain Pumps will not involve a test or experiment not described in the SAR. All testing with this installation will be in accordance with approved ANO procedures.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____. (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

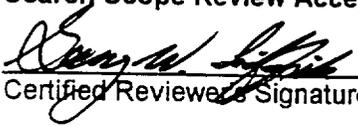
List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
<u>LRS: Unit 2 50.59 ("ion chromatograph" "demineralizer w/10 sample" "heater drain w/10 sample")</u>	
MANUAL SECTIONS: Section 9.3.2.2.2	
FIGURES: 9.3-3 and 10.4-7	
	John Harvey
Certified Reviewer's Signature	Printed Name
Reviewer's certification expiration date: <u>12/11/99</u>	<u>7/27/99</u>
	Date

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	GARY W. LIFFICK	<u>8/4/99</u>
Certified Reviewer's Signature	Printed Name	Date

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**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

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Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

FORM TITLE:

10CFR50.59 SAFETY EVALUATION

FORM NO.

1000.131B

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3 PC-2

This Document contains 2 Pages.

Document No. ER973954N201

Rev./Change No. 0

10CFR50.59 Eval. No.

(Assigned by PSC)

FFN
99-068

Title ANO-2 SU/BD DI Sample to On-Line Ion Chromometer

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

The existing sample lines are not considered an accident initiator in the accident analysis nor do they impact the recovery actions for evaluated accidents. A failure of one of the added lines will not be any change from a failure of the existing sample lines. The probability of a previously evaluated accident will not be increased.

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2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

The existing sample lines are not considered an accident initiator in the accident analysis nor do they impact the recovery actions for evaluated accidents. A failure of one of the added lines will not be any different than a failure of the existing sample lines. The consequences of an evaluated accident will remain unchanged.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The existing sample lines are not considered important for safety, the existing sample lines are not relied on for an accident analysis. A failure of one of the added lines will not be any different than a failure of the existing sample lines. The probability of a malfunction of equipment important to safety will not be increased.

4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The existing sample lines are not considered important for safety, the existing sample lines are not relied on for any accident analysis. A failure of one of the added lines will not be any different than a failure of the existing sample lines. The consequences of a malfunction of equipment important to safety will not be increased.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

The existing sample lines have continuous flow through them, a failure of one of these lines will not change secondary inventory considerations for any accident. A failure of the new lines will not create any additional losses of secondary inventory. The possibility of an accident of a different type than previously evaluated will not be created.

FORM TITLE:

10CFR50.59 SAFETY EVALUATION

FORM NO.

1000.131B

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6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

Yes No

The existing sample lines are not considered important for safety, the existing sample lines are not relied on for any accident analysis. A failure of one of the added lines will not be any different than a failure of the existing sample lines. The possibility of a malfunction of equipment important to safety of a different type than previously evaluated will not be created.

NC 973954N201

PAGE 8 REV 0

7. Will the margin of safety as defined in the basis for any technical specification be reduced?

Yes No

The equipment involved in this change are below the scope of the technical specification basis.



Certified Reviewer's Signature

John Harvey

Printed Name

7/27/99

Date

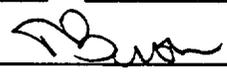
Reviewer's certification expiration date: 12/11/99

Assistance provided by:

Printed Name

Scope of Assistance

Date

PSC review by: 

Date: 9/2/99

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FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

'003-04-0

This Document contains 4 Pages.

Document No. ER974061E201

Rev./Change No. 2

Title Refueling Equipment Setpoints

Brief description of proposed change:

Underload setpoint limits will be decreased from present values. The 100-pound limit is too conservative and will be abolished as grid-to-grid interactions are protected at a loading of less than 262 lbs. Buoyancy effects will be applied to the fuel plus hoist underload setpoint limit.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?

Yes No

Operating License?

Yes No

Confirmatory Orders?

Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?

Yes No

Core Operating Limits Report?

Yes No

Fire Hazards Analysis?

Yes No

Bases of the Technical Specifications?

Yes No

Technical Requirements Manual?

Yes No

NRC Safety Evaluation Reports?

Yes No

3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)

Yes No

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAPM?

Yes No

E-Plan?

Yes No

8. Does this review depend on future NRC approval of other actions? (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9)

Yes No

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.
1000.131AREV.
'003-04-0Document No. ER974061E201Rev./Change No. 2**Basis for Determination (Questions 1, 2, & 3):**

Will the proposed change:

- 1) Require a change to the Operating License? NO

Unit Two Technical Specification 3.9.6 requires that the refueling machine be operable with an overload cutoff limit of less than or equal to 100 pounds plus the combined weight of one fuel assembly, one CEA, and grapple/hoist, where applicable. Proposed changes do not violate these requirements. Underload cutoff limits are not mentioned in the Operating License documents. Moreover, the method to determine underload cutoff limits is beyond the level of detail provided in the Operating License documents.

- 2) Result in information in the SAR or SAR documents being a) no longer true or accurate or b) violate requirements stated in the documents? YES

Section 9.1.4.1.2 of the Unit Two SAR lists the principal design criteria for the fuel handling equipment. Specifically, 9.1.4.1.2.G provides the requirements for overload and underload limits. The current underload limits are determined by adding the nominal fuel assembly weight and grapple weight, then subtracting 100 pounds. ER974061E201 will result in that information being no longer true. An LDCR has been issued to change the SAR. This will require a 10CFR 50.59 evaluation.

- 3) Involve a test or experiment not described in the SAR? NO

ER974061E201 involves the refueling equipment setpoints. This is considered a principal design criterion of the fuel handling equipment and therefore does not constitute an unanalyzed test or experiment.

FORM TITLE: 10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 003-04-0
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Document No. ER974061E201 Rev./Change No. 2

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # ____ (If checked, note appropriate item #, send LDCR to Licensing).

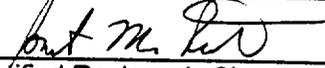
Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS:	50.59 – Unit Two (underload*, load* w/10 setpoint* w/20 refueling, machine w/10 underload, fuel plus hoist, overload w/10 setpoint, underload w/10 setpoint)

MANUAL SECTIONS: U2 SAR section 9.1.4, U2 TS 3.9.6

FIGURES: U2 SAR Figure 9.1-6

	<u>Jonathan M. Ralston</u>	<u>2-21-01</u>
Certified Reviewer's Signature	Printed Name	Date
Reviewer's certification expiration date:	<u>3-16-02</u>	

Assistance provided by:

<u>Printed Name</u>	<u>Scope of Assistance</u>	<u>Date</u>
<u>Jaime H. McCoy</u>	<u>Search scope identification</u>	<u>11/28/00</u>
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	<u>Michael R. McKinnon</u>	<u>2/21/01</u>
Certified Reviewer's Signature	Printed Name	Date

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. E974061E201 Rev./Change No. 2

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

FORM TITLE:

10CFR50.59 SAFETY EVALUATION

FORM NO. 1000.131B

REV. 003-04-0

This Document contains 1 Page.

Document No. ER974061E201

Rev./Change No. 2

10CFR50.59 Eval. No. FFN#01-01
(Assigned by PSC)

Title Refueling Equipment Setpoints

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- 1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No
- 2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No
- 3. Will the probability of a malfunction of equipment important to safety be increased? Yes No
- 4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No
- 5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No
- 6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No
- 7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

[Signature]
Certified Reviewer's Signature

Jonathan M. Ralston
Printed Name

2-21-01
Date

Reviewer's certification expiration date: 3-16-02

Assistance provided by:

Printed Name	Scope of Assistance	Date
<u>Jaime H. McCoy</u>	<u>Search and verification</u>	<u>11/28/00</u>
_____	_____	_____
_____	_____	_____

PSC review by: [Signature] Date: 2/22/01

FORM TITLE:

10CFR50.59 REVIEW CONTINUATION PAGE

FORM NO.
1000.131CREV.
003-04-0Document No. ER974061E201Rev./Change No. 210CFR50.59 Review Continuation Page

The ER in question seeks to increase the range of operation for the fuel handling equipment. This will be accomplished by removing the 100-pound limit that is subtracted from grapple and fuel assembly weights to determine the underload setpoint. The limit will be replaced with a higher value that protects the minimum load that will cause grid damage (< 262 lbs.).

Basis for Answers to the Evaluation Questions

1. Will the probability of an accident previously evaluated in the SAR be increased? NO

For the accidents evaluated in the SAR, the only event that could be affected by the changes proposed in ER974061E201 is the Fuel Handling Accident. A change of the refueling equipment overload and underload setpoints does not increase the probability of dropping a fuel assembly, as all interlocks which protect the grapple open/close position will remain unchanged and unaffected. Thus, the probability of a fuel handling accident is not increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased? NO

The minor damage to a fuel assembly that could be caused by grid damage is prevented by insuring the underload setpoints are set such that the minimum load required to cause grid damage is protected. It does not influence fuel-handling evolutions and the radiological consequences of a fuel handling accident are bounding. Thus, the consequences of a fuel handling accident are not increased.

3. Will the probability of a malfunction of equipment important to safety be increased? NO

The changes to the underload setpoints can effect only the (a) refueling equipment and the (b) fuel assemblies.

The underload setpoints will be set conservatively such that the fuel handling equipment is protected from possible damage. The installation and testing of setpoints are controlled by site procedures and only qualified individuals operate the equipment. Moreover, these changes do not involve physical changes to the refueling equipment or its seismic status. Thus, the probability of a malfunction of the refueling equipment is not increased.

As stated above, the underload setpoints will be set conservatively to prevent grid damage. The fuel assembly will not be subjected to unanalyzed conditions due to the changes in setpoints. Thus, the probability of a malfunction of the fuel assembly is not increased.

4. Will the consequences of a malfunction of equipment important to safety be increased? NO

The worst possible consequence of a malfunction of the refueling equipment is a fuel handling accident. It has been determined above that the probability and consequences of a fuel handling accident will not increase due to the underload setpoint changes. Other consequences are inconsequential and, when compared to the fuel handling accident, bounded by its analysis.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? NO

The underload setpoint changes do not change the design function of plant equipment or the method of operation of plant equipment. Furthermore, no new equipment will be installed as a result of these changes. Therefore, the possibility of an accident of a different type than any previously evaluated in the SAR is not created.

FORM TITLE:

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6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? NO

As noted in Question #5 above, the underload setpoint changes do not change the design function of plant equipment or the method of operation of plant equipment. Furthermore, no new equipment will be installed as a result of these changes. Therefore, the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR is not created.

7. Will the margin of safety as defined in the bases for any technical specification be reduced? NO

The only technical specification that applies to the setpoints of the refueling machine is 3.9.6. This technical specification applies only to overload conditions as the spec seeks to ensure that the refueling machine has sufficient load capacity to lift a fuel assembly and that the core internals and pressure vessel are protected from excessive lifting force. This basis does not apply to underload conditions. Therefore, the margin of safety as defined in the bases for any technical specification is not reduced.

Conclusion

Based upon the negative responses to the seven safety evaluation questions, the changes to the underload setpoints for the refueling equipment does not introduce an unreviewed safety question.

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This Document contains 3 Pages.

Document No. ER 974119P201

Rev./Change No. 0

Title REMOVAL OF MULTIPLE CONTROL STATION 2N-130

Brief description of proposed change:

ER 974119P201 removes 2N-130 and replaces it with a terminal box. 2N-130 is a multiple control station for controlling the Cooling Tower De-Ice Valves, 2CV-1208 & 2CV-1209, and the Cooling Tower Bypass Valve, 2CV-1205. Each valve has a momentary switch for push to open or push to close and closed and open indication lights. This ER removes the entire panel replacing it with a terminal box that allows the cabling now running through 2N-130 from 2C-125 to the Cooling Tower Valves to remain in place.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?

Yes No

Operating License?

Yes No

Confirmatory Orders?

Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?

Yes No

Core Operating Limits Report?

Yes No

Fire Hazards Analysis?

Yes No

Bases of the Technical Specifications?

Yes No

Technical Requirements Manual?

Yes No

NRC Safety Evaluation Reports?

Yes No

3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)

Yes No

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAMO?

Yes No

E-Plan?

Yes No

FORM TITLE:

10CFR50.59 DETERMINATION

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Document No. ER 974119P201

Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

Question 1: The Operating License does not address the Multiple Control Station, 2N-130, nor does it provide details pertaining to the control system for the cooling tower valves in sufficient detail to include mention of 2N-130 or it's functions.

Question 2: SAR Figure 8.3-53, section D depicts an elevation view of the panel arrangement adjacent to the cooling tower including 2N-130. SAR Figure 10.4-1 also includes references to 2N-130 as does SAR Figure 10.4-4 Sh 2. These figures will require revision.

Question 3: The proposed change does not involve a test or experiment. The Cooling Tower Valves will not be operated in modes that have not been previously analyzed.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # . (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If a keyword search was done on LRS, "all" may be entered under "Section" with the keyword(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

Document

Section

LRS: All (2N-130, 2CV-1205, 2CV-1208, 2CV-1209, Cooling Tower and De-Ice, De-Ic*)

MANUAL SECTIONS: Tech Spec Index, SAR Table of Contents, SAR Section 10.4.5.2, Table 10.4-3

FIGURES: Figures 8.3-53, 10.4-1, & 10.4-4

Steven L. Smith
Certified Reviewer's Signature

Steven L. Smith
Printed Name

7/7/98
Date

Reviewer's certification expiration date: 3/5/99

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

John Harvey
Certified Reviewer's Signature

John HARVEY
Printed Name

12/1/98
Date

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

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REV.

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974119P201 PAGE 5 OF 42

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Document No. ER 974119P201

Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

FORM TITLE: 10CFR50.59 SAFETY EVALUATION	FORM NO. 1000.131B	REV. 3
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This Document contains 3 Pages.
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Document No. ER974119P201 Rev./Change No. 0 10CFR50.59 Eval. No. FFN-98-167
 (Assigned by PSC)

Title Remove 2N-130

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No
2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No
3. Will the probability of a malfunction of equipment important to safety be increased? Yes No
4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No
5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No
6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No
7. Will the margin of safety as defined in the bases for any technical specification be reduced? Yes No

Steven L. Smith
 Certified Reviewer's Signature

Steven L. Smith
 Printed Name

7/8/98
 Date

Reviewer's certification expiration date: 3/5/99

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

PSC review by: [Signature] Date: 12/22/98

FORM TITLE:

10CFR50.59 REVIEW CONTINUATION PAGE

FORM NO.

1000.131C

REV.

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Document No. ER974119P201Rev./Change No. 010CFR50.59 Review Continuation Page**1. Will the probability of an accident previously evaluated in the SAR be increased?**

2N-130 is not part of the SIMS Component Data Base and as such does not have a QA CAT such as non-Q. The Cooling Tower valves associated with this control panel are non-Q and are not credited with initiating any of the accidents evaluated in the SAR. Removing the 2N-130 control panel will not create any new conditions that would increase the likelihood of the events which are credited with initiating an accident previously evaluated in the SAR.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

The removal of 2N-130 control panel will not change how the Cooling Tower valves are operated since this control station is not used by Operations for control or indication. Since this control panel is not used, its removal will have no effect on any operational procedures. Therefore, there is no increase in the off site dose consequences of a previously analyzed accident as a result of deleting 2N-130.

3. Will the probability of a malfunction of equipment important to safety be increased?

The Cooling Tower de-ice valves, 2CV-1208 & 2CV-1209, along with the bypass valve, 2CV-1205, are not considered to be equipment important to safety. Further, the control of these valves is typically remote from 2C-14 (located in the Control Room) or during maintenance on the cooling tower the control is sometimes local at the valve. The 2N-130 control panel is not currently used to change position of these valves or used to determine their position. Since 2N-130 is not used for control or indication of the non-safety related Cooling Tower valves, its removal will not increase the probability of a malfunction of equipment important to safety.

4. Will the consequences of a malfunction of equipment important to safety be increased?

The removal of 2N-130 will have no effect on the consequences of a malfunction of equipment important to safety since it is only associated with equipment which is not considered important to safety. Its removal will cause no change in the off site radiation dose (i.e., consequences of a failure) associated with a plant's response to an accident.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

The removal of 2N-130 will not create an accident of a different type since no new failures are introduced due to this change. 2N-130 is not currently used (in fact, 2N-130, due to its undesirable and unintended cross control features, cannot be used) to control the Cooling Tower valves. Since it is not currently and in fact cannot currently be used to control the Cooling Tower valves, its removal will not create a new type of failure or accident different from the type of accident previously evaluated in the SAR.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

The removal of 2N-130 does not introduce a malfunction that has not been previously evaluated. Since 2N-130 is not currently used (nor could it be used) to control the Cooling Tower valves, its removal cannot effect the malfunction of any equipment important to safety or for that matter not important to safety.

7. Will the margin of safety as defined in the bases for any technical specification be reduced?

The Cooling Tower valves are not referenced in the bases for any technical specification and therefore the removal of a redundant control panel for these valves will not reduce the margin of safety for any technical specification.

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FORM TITLE:

10CFR50.59 DETERMINATION

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3 PC-1

This Document contains 3 Pages.

Document No. ER974328L201 L201Rev./Change No. 0

Title

BORONOMETER 2AE-4813 SEALED SOURCE REMOVAL

Brief description of proposed change:

PAGE 3 REV. 0

This modification package is Limited Change Package which removes the sealed radioactive source from the Boronometer, 2AE-4813. The Boronometer was abandoned in place by DCP-89-2017, but the sealed source was not removed. Because this DCP did not remove the sealed source, 18 month leakage surveillance is required by Tech Specs 4.7.9.1.2.d. This modification removes the source so that 18 month surveillance is no longer required.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?

Yes No

Operating License?

Yes No

Confirmatory Orders?

Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?

Yes No

Core Operating Limits Report?

Yes No

Fire Hazards Analysis?

Yes No

Bases of the Technical Specifications?

Yes No

Technical Requirements Manual?

Yes No

NRC Safety Evaluation Reports?

Yes No

3. Involve a test or experiment not described in the SAR?
-
- (See Attachment 2 for guidance)

Yes No

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAMO?

Yes No

E-Plan?

Yes No

ER-974328L201

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

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REV.

3 PC-1, 2

Document No. ER974328L01 ^{cb} 201 7/27/99

Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

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DCP-89-2017 included abandoning 2AE-4813 Boronometer in place. This LCP removes the sealed source, which requires changes to the SAR and Tech. Specs.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.

Document

Section

LRS:

Unit 2 50.59 All (Boronometer)

Unit 2 Tech. Spec. All (Boronometer)

Confirmatory Orders All (Boronometer)

Unit 2 SAR All (Boronometer)

QAMO All (Boronometer)

E-Plan All (Boronometer)

FHA All (Boronometer)

Unit 2 Tech Spec Bases All (Boronometer)

NRC SER's All (Boronometer)

MANUAL SECTIONS:

Unit 2 SAR Table 9.3-21#, Table 14.1-1#, Unit 2 Tech Spec. 4.7.9.1.2.d# (LDCRs attached)

FIGURES:

Unit 2 SAR Figure 9.3-4

Douglas A. Bruce
Certified Reviewer's Signature

Douglas A. Bruce

Printed Name

6/7/99

Reviewer's certification expiration date: 2/25/01

ER-974328L201

Assistance provided by:

Printed Name

Zachary D. Sadecki

Scope of Assistance

Research

Date

7/29/97

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

Robert J. Busar

Robert Busar

6/7/99

FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

3

ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)

PAGE 5 REV. 0

Document No. ER974328L201

Rev./Change No. 0

Title BORONOMETER 2AE-4813 SEALED SOURCE REMOVAL

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

Yes

No

- Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area.
- Increase thermal discharges to lake or atmosphere?
- Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
- Modify the design or operation of cooling tower which will change drift characteristics?
- Install any new transmission lines leading offsite?
- Change the design or operation of the intake or discharge structures?
- Discharges any chemicals new or different from that previously discharged?
- Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water?
- Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water?
- Involve incineration or disposal of any potentially hazardous materials on the ANO site?
- Result in a change to nonradiological effluents or licensed reactor power level?
- Potentially change the type or increase the amount of non-radiological air emissions from the ANO site.

ER-974328L201

FORM TITLE:

10CFR50.59 SAFETY EVALUATION

FORM NO.

1000.131B

REV.

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This Document contains 1 Page.

Document No. ER974328L201

Rev./Change No. 0

10CFR50.59 Eval. No.

(Assigned by PSC)

FFN #
99-094

Title BORONOMETER 2AE-4813 SEALED SOURCE REMOVAL

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No
2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No
3. Will the probability of a malfunction of equipment important to safety be increased? Yes No
4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No
5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No
6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No
7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

Douglas A. Bruce
Certified Reviewer's Signature

Douglas A. Bruce
Printed Name

6/7/99
Date

Reviewer's certification expiration date: 2/25/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
<u>Zachary D. Sadecki</u>	<u>Research</u>	<u>7/29/97</u>
_____	_____	_____
_____	_____	_____

PSC review by:

Michael Hami

Date:

10/14/99

PAGE

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ER-974328L201

FORM TITLE:

10CFR50.59 REVIEW CONTINUATION PAGE

FORM NO.

1000.131C

REV.

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This Document contains 1 Page. ^{44B} 6/17/00

Document No. 974328L201

Rev./Change No. 0

10CFR50.59 Review Continuation Page

RESPONSES TO QUESTIONS

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1. Will the probability of an accident previously evaluated in the SAR be increased?

This LCP only addresses the removal of the sealed source contained within the boronometer. This sealed source is contained in equipment which has already been abandoned in place, and is not part of any safety related system. Therefore, its removal can not increase the probability of an accident previously evaluated in the SAR.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

The removal of the boronometer sealed source, being a part of an already abandoned, non-safety related piece of equipment, would not increase the consequences of an accident previously evaluated in the SAR.

3. Will the probability of a malfunction of equipment important to safety be increased?

The boronometer sealed source is not part of any safety related system and is part of an already abandoned piece of equipment. Consequently, the removal of this sealed source can not increase the malfunction of equipment related to safety.

4. Will the consequences of a malfunction of equipment important to safety be increased?

The sealed source being removed is part of a non-safety related, abandoned piece of equipment. Furthermore, the sealed source is not related to any equipment important to safety. Therefore the consequences of a malfunction of equipment important to safety can not be increased.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

The boronometer is already abandoned in place and removing the sealed source can not initiate any accidents nor is it used in response to any accident. The removal of this sealed source can not create an accident of a different type than any previously evaluated in the SAR.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

The removal of this sealed source, being a part of non-functioning, abandoned equipment, can not cause malfunctions to any equipment. Therefore, the removal of this sealed source can not create a possibility of malfunction of equipment important to safety of a different type than any previously evaluated in the SAR.

7. Will the margin of safety as defined in the bases for any technical specifications be reduced?

This boronometer sealed source is not discussed in any of the bases of the technical specifications. Therefore, its removal can not decrease or reduce the margin of safety.

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This Document contains 3 Pages.

Document No. ER974372N201

Rev./Change No. 0

Title ANO-2 HP and LP Turbine Upgrade for RSG/PU

Brief description of proposed change: This NCP replaces the entire HP Turbine steam path, the steam path for LP Turbine stages 7,8 and 9, the last stage blades on the LP Turbines and associated instrumentation and control changes. This NCP is required to support full power operation following 2R14 and to optimize plant performance at power uprated conditions following 2R15. Although the HP and LP Turbine modifications were designed for power uprated conditions, this 50.59 does not address changes in plant parameters as a result of the installation of the replacement steam generators during 2R14 or the power uprate modifications during 2R15. These changes in plant parameters are addressed in ER002361N201 and ER002344N201, respectively.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No

3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No

4. Result in a potential impact to the environment? (Complete the Environmental Impact Determination of this form.) Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No

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003-04-0

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7:

QAPM?

Yes No

E-Plan?

Yes No

8. Does this review depend on future NRC approval of other actions (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9)

Yes No

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ARKANSAS NUCLEAR ONE		
FORM TITLE: 10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. '003-04-0

Document No. **ER974372N201**

Rev./Change No. **0**

Basis for Determination (Questions 1, 2 & 3):

- 1) This 50.59 determination evaluates the HP Turbine modification as outlined in ER974372N201. This NCP involves the redesign of both the HP and LP turbines to support plant operation during operating cycle 15 and to optimize plant performance at the power uprated conditions following 2R15. Specifically, this NCP replaces the entire HP Turbine steam path, the LP Turbine steam path for stages 7, 8 and 9, the LP turbine last stages blades and associated instrumentation and control changes. This modification does not impact the Technical Specifications, Operating License or confirmatory orders.
- 2) SAR Sections 10.2.1, 10.2.2, SAR Figures 10.2-1, 10.2-2, 10.2-5 require revision as a result of this NCP. No other LBD information will be untrue or inaccurate as a result of this NCP.
- 3) This NCP will not involve any test or experiment not described in the SAR.
- 4) The proposed modification does not involve any activity that could potentially impact to the environment.
- 5) Although the activities associated with this NCP do not require Radiological Safety Evaluation, RSE 00-008 was completed to address this scope of work.
- 6) This NCP does not result in an impact to the equipment or facilities utilized for Ventilated Storage Cask activities.
- 7) This NCP Does not impact the QAMP or E-Plan.
- 8) This NCP does not depend on future NRC approval.

Proposed change does not require 10 CFR 50.59 Evaluation per Attachment 1, Item # ____, (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in Question 1, 2 and 3. If a search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

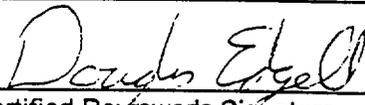
Document

Section

LRS: 50.59 – Unit 2 (high pressure turbine, low pressure turbine, 2*K*, HP w/10 turbine, LP w/10 turbine, Bucket*, Blad*, steam path, diaphragms, missile w/10 turbine)

MANUAL SECTIONS: 10.2, 15, 3.5.2

FIGURES: SAR Figures 10.2-1, 10.2.2 and 10.2-4


 Certified Reviewer's Signature

Douglas Edgell
 Printed Name

7/10/00
 Date

Reviewer's certification expiration date: **02/03/2001**

ARKANSAS NUCLEAR ONE

FORM TITLE:

10CFR50.69 DETERMINATION

FORM NO.

1000.131A

REV.

'3 PC-1,2

Assistance provided by:

Printed Name	Scope of Assistance	Date
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Search Scope Review Acceptability (NA, if performed by Technical Review per 1000.006)

Milton Huff
Certified Reviewer's Signature

Milton Huff
Printed Name

7-12-2016
Date

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

Document No. ER974372N201

Rev./Change No. 0

Complete the following Determination. If the answer to any checklist item is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

ARKANSAS NUCLEAR ONE		
FORM TITLE: 10CFR50.59 EVALUATION	FORM NO. 1000.131B	REV. '003-04-0

This Document contains 2 Pages.

10CFR50.59 Eval. No. FFN# 00-091
(Assigned by PSC)

Document No. ER974372N201

Rev./Change No. 0

Title ANO-2 HP and LP Turbine Upgrade for RSG/PU

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

The proposed modification to the high pressure and low pressure turbine will not increase the likelihood of a turbine trip or turbine malfunction. The replacement components were redesigned by the OEM and fabricated using established industry methods and superior materials. The following previously evaluated accidents, which have a turbine trip/malfunction as an accident initiator, were assessed for this NCP.

- Loss of External Load or Turbine Trip
- Loss of All Normal and Preferred AC Power to the Station Auxiliaries
- Loss of Condenser Vacuum
- Turbine Trip with Failure of Generator Breakers to Open
- Malfunction of Gland Steam System

All turbine related systems will functionally perform the same as prior to the modification.. The turbine emergency trip system, overspeed protection system, extraction steam system, and turbine valves will not have any significant operational changes due to this modification . Main turbine operation will continue to be bounded by the safety analysis.

The proposed HP & LP turbine modifications in combination with the steam generator replacement will have a limited effect on secondary plant parameters such as temperature, pressure, and enthalpy for operating cycle 15 and 16. These changes will primarily be in the high pressure sections of the turbine steam path, feedwater system, main steam system and extraction steam system. These changes are evaluated in ER002361N201 for Operating Cycle 15 and ER002344N201 beginning with Operating Cycle 16. The changes to the secondary system as shown on the heat balance diagrams will not adversely impact the conservative assumptions used by any safety analysis and remain bounded by the existing safety analysis.

The probability of occurrence of a turbine trip/malfunction by an accident initiator as previously evaluated in the SAR is not increased by this modification.

ARKANSAS NUCLEAR ONE

FORM TITLE:

10CFR50.59 EVALUATION

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2. Will the consequences of an accident previously evaluated in the SAR be increased?

Yes No

The modifications proposed by this NCP will not affect the capability of any equipment to mitigate the consequences of any previously evaluated accidents. Nor does it change, degrade, or prevent actions described in an accident discussed in the SAR. Radiological barriers are not impacted and new pathways are not created for the release of radioactive materials; therefore the dose consequences of any previously evaluated accident in the SAR is not increased

3. Will the probability of a malfunction of equipment important to safety be increased?

Yes No

The modification proposed to the HP & LP turbines will not affect the ability of the turbine or turbine support systems to perform as outlined in the LBD's. The turbine is no more likely to overspeed than previously analyzed. Additionally, the likelihood of a malfunction of the turbine to trip or failure of turbine valve closure on a turbine trip is no more likely than previously analyzed. The proposed modification was designed by the original equipment manufacture and meets all of the original design specifications for material and construction practices. Turbine related missile generation is no more likely than previously analyzed. This modification will not increase the probability of a malfunction of equipment important to safety.

4. Will the consequences of a malfunction of equipment important to safety be increased?

Yes No

The modification proposed to the HP & LP turbines are designed to improve the turbines performance under the RSG and Power Uprate conditions and will not affect the ability of safety related equipment to mitigate the consequences of a previously evaluated accident described in the SAR. The radiological consequences as evaluated in the SAR are not impacted by this modification. The conservative assumptions used by the existing safety analysis or any other safety analysis are not adversely impacted by this modification. The existing safety analysis is still bounding. Implementation of this modification will not increase the consequences of a malfunction of equipment important to safety.

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FORM TITLE:

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5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

Yes No

The proposed rotor modifications to the HP and LP turbines are designed for an approximate 9% increase in steam flow and greater blade efficiency. This NCP will result in an improved unit heat rate and increase generator output. The remaining turbine components and support systems remain unchanged. The turbine operational characteristics will be functionally equivalent to the original design. Engineering evaluations performed by the check valve program and erosion/corrosion program, review of P-T Calcs, HELB analysis, MELB analysis per ER00-02361N201 ensure that the changes in steam conditions for the steam lines will not have a negative impact on plant safety or performance. All previous safety analysis are still applicable and bounding. No new accident initiators have been created. The possibility of an accident of a different type than previously evaluated in the SAR will not be created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

Yes No

There are no new accident initiators created by the proposed modification. The modification is functionally equivalent to the existing design. All original design codes and standards have been met. The turbine pressure boundary will remain unchanged. The possibility of a different type of equipment malfunction that is important to safety other than that previously evaluated in the SAR is not created.

7. Will the margin of safety as defined in the basis for any technical specification be reduced?

Yes No

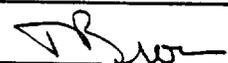
Operation of the main turbine with the proposed modifications will be within the Technical Specifications, limits and bases. There will not be any margins of safety impacted by this modification; therefore, the margin of safety as defined in the Bases of any Technical Specification will not be reduced.

 Douglas Edgell 7/10/00
 Certified Reviewer's Signature Printed Name Date

Reviewer's certification expiration date: 02/03/2001

Assistance provided by:

Printed Name Scope of Assistance Date

PSC review by:  Date: 8/24/2000

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NC 974811N201

This Document contains 3 Pages.

Document No. ER 974811N201

PAGE **8** REV **0** Rev./Change No. **0**

Title Replace 2LS-9748

Brief description of proposed change: See title

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No

3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No

4. Result in a potential impact to the environment? (Complete the Environmental Impact Determination of this form.) Yes No

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7:
 - QAMO? Yes No
 - E-Plan? Yes No

8. Does this review depend on future NRC approval of other actions (NRC SER, Relief, etc)? (forward change to PSC per 6.3.8 or 6.3.9) Yes No

FORM TITLE: <div style="text-align: center;">ARKANSAS NUCLEAR ONE</div> <div style="text-align: center;">10CFR50.59 DETERMINATION</div>	FORM NO. <div style="text-align: center;">1000.131A</div>	REV. <div style="text-align: center;">003-04-0</div>
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Document No. **ER 974811N201**

Rev./Change No. **0**

NC 974811N201

Basis for Determination (Questions 1, 2 & 3):

PAGE 9 REV 0

Proposed change does not require 10 CFR 50.59 Evaluation per Attachment 1, Item #__, (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

List sections reviewed in the Licensing Basis Documents specified in Question 1, 2 and 3. If a search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

<u>Document</u>	<u>Section</u>
LRS:	
ALL	(2LS-9748, 2T-157, GENERATOR SEAL OIL, 2C415, 2C140, HYDROGEN, VACUUM TANK, SEAL W/5 OIL, VAPOR W/15 PURGE, 2C20)

MANUAL SECTIONS:	
SAR	Section 10.2

FIGURES:	
SAR FIGURE	3.2-6

<u>Steve Capehart</u>	STEVE CAPEHART	5-8-00
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 5/4/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
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Search Scope Review Acceptability (NA, if performed by Technical Review per 1000.006)

<u>Cleveland Reasoner</u>	Cleveland Reasoner	5/8/00
Certified Reviewer's Signature	Printed Name	Date

**ENVIRONMENTAL IMPACT DETERMINATION
(UNIT 1 and UNIT 2)**

NC 974811N201

Document No. **ER 974811N201**

Rev./Change No. **0**

PAGE 10 REV 0

Complete the following Determination. If the answer to any checklist item is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

This Document contains 1 Page.

Document No. **ER 974811N201**

Rev./Change No. **0**

NC 974811N201

10CFR50.59 Review Continuation Page

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This Nuclear Change will abandon Generator Seal Oil (GSO) Vacuum Tank level switch 2LS-9748 and install a new external level indicator switch. The new external level indicator switch will provide the original design functions provided by 2LS-9748. This NCP will also provide a component tag number for the vapor purge valve associated with seal oil vacuum pump 2C-20. This portion of the NCP does not physically affect any components.

QUESTION 1 – Operating License

The type of GSO Vacuum Tank level switch used at ANO is not discussed in the level of detail present in the ANO-1 or ANO-2 Technical Specifications, Operating License or any Confirmatory Orders.

QUESTION 2 – SAR Documents

The type of GSO Vacuum Tank level switch used at ANO is not discussed in any of the SAR documents. However, the associated P&ID, M-2208 sht 2, is shown as SAR Figure 3.2-6 and this P&ID is being changed to reflect the configuration of the new level indicating switch.

QUESTION 3 – Test or Experiment

The post modification testing performed by this NC is within ANO procedures.

QUESTION 4 – Environmental Impact

The modifications made by this NC do not require an Environmental Impact Evaluation per the Environmental Impact Checklist.

QUESTION 5 – Radiological Safety Evaluation

The work performed by this NC will not affect the processing of radioactive material. The NC will not create new monitored or unmonitored ventilation or drainage pathways. There will not be any radioactive material generated as a result of this NC.

QUESTION 6 – Ventilated Storage Cask

The GSO Vacuum Tank level switch is not associated with the VSC project.

QUESTION 7 – QAMO or E-PLAN

The type of GSO Vacuum Tank level switch used at ANO is not referenced in the QAMO or E-PLAN.

NC 974811N201

Page 1 of 2

PAGE 12 REV 0

10CFR50.59 Eval. No.
(Assigned by PSC)

FFN# 00-031

Document No. 974811N201Rev./Change No. 0Title REPLACE 2LS-9748

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased?

Yes No

The affected level switch is used to monitor the level in GSO Vacuum Tank 2T-157. The level switch does not interface with any equipment, piping etc that are considered accident initiators. Therefore, the probability of an accident previously evaluated in the SAR is not increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

Yes No

The GSO Vacuum Tank level switch does not interface with or affect the operating performance of the systems, structures and components required to mitigate the consequences of an accident. Therefore, the consequences of an accident previously evaluated in the SAR are not increased.

3. Will the probability of a malfunction of equipment important to safety be increased?

Yes No

The GSO Vacuum Tank level switch is not considered equipment important to safety and does not physically or electrically interface with any equipment that is considered equipment important to safety. Therefore, the probability of a malfunction of equipment important to safety is not increased.

4. Will the consequences of a malfunction of equipment important to safety be increased?

Yes No

The GSO Vacuum Tank level switch does not interface with any equipment that is important to safety. The critical characteristics of equipment important to safety are not affected by the installation of the new analyzers. Therefore, the consequences of a malfunction of equipment important to safety are not increased.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

Yes No

The GSO Vacuum Tank level switch is not considered an accident initiator and does not interface with equipment that is considered an accident initiator. The function of the GSO Vacuum Tank level switch to monitor the level in tank 2T-157 and provide HI/LO level alarms is unchanged by this modification. Therefore, the possibility of an accident of a different type than any previously evaluated in the SAR is not created.

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FORM TITLE:

10CFR50.59 DETERMINATION

FORM NO.

1000.131A

REV.

3 PC-1

This Document contains 3 Pages.

Document No. ER974981N201

Rev./Change No. 0

Title Replace ANO-2 Main Generator Core Monitor

Brief description of proposed change:

This modification will replace the existing unit 2 main generator core monitor with a newer, more reliable replacement. In addition to the basic core monitor replacement, a new pyrolysate collector will be added which will aid in troubleshooting should an overheating condition occur.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
 - QAMO? Yes No
 - E-Plan? Yes No

Document No. ER974981N201

Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

1. This change will not require a change to the Tech Spec, Operating License, or Confirmatory Orders. A search was made on LRS, which found no conflicting information regarding this change.
2. This change will not result in any, Core Operating Limits Report, Fire Hazards Analysis, Tech Spec Bases, Technical Requirements Manual, or NRC Safety Evaluation Reports being (a) no longer true or accurate, or (b) violate a requirement stated in the document. A search was made on LRS that found no conflicting information regarding this change. SAR figure 3.2-6 (drawing M-2208 sheet 1) will be impacted by this modification. A licensing document change request has been initiated.
3. This change does not involve a test or experiment. This modification will be tested using standard post modification testing standards and procedures. The post-mod testing specified in this modification will not affect the margin of safety from an accident or transient perspective.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # __ (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

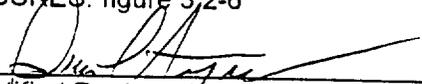
List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.

Document Section

LRS: All. Common, keywords: "generator w/10 hydrogen", "generator w/10 monitor", generator w/10 temperature", "hydrogen w/10 cooling", "core monitor", 2AI-9730, 2AR-9730.

MANUAL SECTIONS: Unit 2 SAR section 8.3, 10.2, & section 3

FIGURES: figure 3.2-6

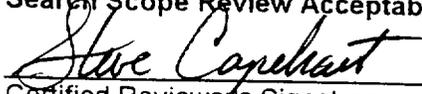
	Jimmy L. Ayres	8/30/00
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 10/22/2000

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	Steve Capehart	8-30-00
Certified Reviewer's Signature	Printed Name	Date

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER974981N201Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

YesNo

- | | | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

FORM TITLE:

ARKANSAS NUCLEAR ONE

Page 1

10CFR50.59 SAFETY EVALUATION

FORM NO. 1000.131B

REV. 3 PC-2

This Document contains 3 Pages.

Document No. ER974981N201 Rev./Change No. 0 10CFR50.59 Eval. No. FEN#00-097 (Assigned by PSC)

Title Replace ANO-2 Main Generator Core Monitor

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- 1. Will the probability of an accident previously evaluated in the SAR be increased? Yes [] No [X]
2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes [] No [X]
3. Will the probability of a malfunction of equipment important to safety be increased? Yes [] No [X]
4. Will the consequences of a malfunction of equipment important to safety be increased? Yes [] No [X]
5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes [] No [X]
6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes [] No [X]
7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes [] No [X]

[Signature] Certified Reviewer's Signature

Jimmy Ayres Printed Name

8/30/00 Date

Reviewer's certification expiration date: 10/22/00

Assistance provided by:

Printed Name Scope of Assistance Date

PSC review by: [Signature] Date: 9/7/00

FORM TITLE:

10CFR50.59 SAFETY EVALUATION

FORM NO.

1000.131B

REV.

3 PC-2

1. Will the probability of an accident previously evaluated in the SAR be increased?

NO

This modification will replace the Main Generator Core Monitor with a newer model designed and made by the original manufacturer. The new monitoring system will include a pyrolylate collector which will aid in confirmation of a generator overheating condition. The new core monitor will be more reliable and will provide for a more timely and accurate damage assessment of a generator overheating condition. The earlier detection and confirmation of an overheating condition should reduce the possibility of severe generator damage and fire in the hydrogen cooling system due to generator overheating. The core monitor only provides a control room alarm and indications (local recorder, computer point). The core monitor does NOT provide a trip contact for the main turbine generator. The core monitor is designed to monitor hydrogen and the associated sample piping/fitting/valves are being installed using standards (i.e. materials, welded connections) consistent for hydrogen piping. The only non-welded fittings are the flange connections at the monitor which will be properly torqued using ANO standards. Based on the aforementioned discussion it is concluded the core monitor system is not an accident initiator and will not increase the probability of any associated system accidents or AOOs (turbine trip or fire). Therefore, the probability of an accident previously evaluated in the SAR is NOT increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

NO

The Main Generator Core Monitor does not directly interface with components necessary to mitigate the consequences (i.e. off-site dose) of an accident. The power supply is from 2Y1 which is EDG backed. The panel breaker serves as the Class 1E-Non 1E interface. The core monitor does not interface with equipment or systems that affect the off-site dose consequences of an accident. Therefore, the consequences of an accident previously evaluated in the SAR are NOT increased.

3. Will the probability of a malfunction of equipment important to safety be increased?

NO

The Main Generator Core Monitor system is non-safety related. The system interfaces (hydrogen cooling, main generator) are also non-safety related. The only safety-related interface is the power supply which is 2Y1. This interface is acceptable given the panel branch breaker (2Y113) serves as the Class 1E-Non 1E interface. The existing core monitor utilizes this breaker and this modification does not affect this interface. The function of the core monitor is display and alarm only and its failure will not adversely affect any safety related equipment or plant operations. Therefore, the probability of a malfunction of equipment important to safety will NOT be increased.

4. Will the consequences of a malfunction of equipment important to safety be increased?

NO

The Main Generator Core Monitor does not interface with equipment important to safety (see Q3 response). Proper design considerations have been utilized to prevent any adverse impact to any SSC's required to mitigate the consequences of an accident. Therefore, the consequences of a malfunction of equipment important to safety are NOT increased.

FORM TITLE:

10CFR50.59 SAFETY EVALUATION

FORM NO.

1000.131B

REV.

3 PC-2

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

NO

The Main Generator Core Monitor is not considered an accident initiator and does not interface with equipment that is considered accident initiators. The function of the core monitor to monitor and alarm/display a generator overheating condition is unchanged by this modification. Therefore, the possibility of an accident of a different type than any previously evaluated in the SAR is NOT created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

NO

The Main Generator Core Monitor does not interface with equipment important to safety (see Q3 response). Proper design considerations have been utilized to prevent any adverse impact to any SSC's required to mitigate the consequences of an accident. Therefore, the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR will NOT be created.

7. Will the margin of safety as defined in the basis for any technical specification be reduced?

NO

The type of Main Generator Core Monitor used to monitor generator overheating conditions is not discussed in the basis for any technical specifications. The measuring capability of the new core monitor meets or exceeds the capabilities of the existing core monitor. The alarm setpoint associated with the new core monitor is conservative when compared to the existing monitor. Therefore, the margin of safety as defined in the basis for any technical specification is NOT reduced.

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ARKANSAS NUCLEAR ONE		
FORM TITLE: 10CFR50.59 DETERMINATION	FORM NO. 1000.131A	Page 1 REV. 3 PC-1

This Document contains 3 Pages.

Document No. ER974991N202 Rev./Change No. 0

Title ANO-2 Steam Generator Blowdown Filtration Modification

Brief description of proposed change:

ER974991N202 modifies the Startup and Blowdown Demineralizer System with the addition of a Steam Generator Blowdown Filter (2F-808) which will be installed downstream of the Steam Generator Blowdown Heat Exchangers (2E-68A & B). This modification is required to support changes in secondary chemistry associated with the steam generator replacement. The primary focus of these changes is an increase in secondary pH to remove residual copper in the secondary system prior to 2R14 and to minimize iron transport to the replacement steam generators after 2R14. Chemistry will be utilizing a dispersant which has the potential of preventing iron that enters the Steam Generators from depositing. An EPRI TC project is in place to qualify the use of the dispersant at ANO-2. The Steam Generator Blowdown Filter will be used to collect iron and copper transport from the blowdown.

Will the proposed Activity:

1. Require a change to the Operating License including:
 - Technical Specifications (excluding the bases)? Yes No
 - Operating License? Yes No
 - Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
 - SAR (multi-volume set for each unit)? Yes No
 - Core Operating Limits Report? Yes No
 - Fire Hazards Analysis? Yes No
 - Bases of the Technical Specifications? Yes No
 - Technical Requirements Manual? Yes No
 - NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No
7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?
 - QAMO? Yes No
 - E-Plan? Yes No

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Document No. ER974991N202 Rev./Change No. 0

Basis for Determination (Questions 1, 2, & 3):

1. Based on the LRS and manual searches summarized below, this modification will not require changes to the Operating License.
2. Unit 2 SAR Section 10.4.10.2, Table 10.4-12 and Fig. 10.4-7 will require revision to show the installation of the Steam Generator Blowdown Filter, 2F-808.
3. This NCP will not involve any tests or experiments.
4. This NCP does not involve any potential impacts to the environment as determined by this review.
5. The Steam Generator Blowdown involved with this NCP is not normally a radioactive system.
6. This NCP does not involve any potential impact to equipment or facilities utilized for the Ventilated Storage Cask activities.
7. The QAMO and E Plan will be unaffected by this NCP.

Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # _____. (If checked, note appropriate item #, send LDCR to Licensing).

Search Scope:

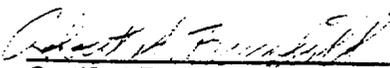
List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If search was performed on LRS, the LRS search index should be entered under "Section" with the search statement(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

Document Section

LRS: All 50.59 – Unit 2 (Demin*, SGB*, "Steam Generator Blowdown", Blow*, 2CV*1098, 2P-139*)

MANUAL SECTIONS: 10.4.6, 10.4.8, 10.4.10.2, Table 10.4-9, Table 10.4-12

FIGURES: 10.2-3, 10.4-7

	Robert A. Brumfield	9/23/99
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 9/2/01

Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

	DAVID MACPINER	10/8/99
Certified Reviewer's Signature	Printed Name	Date

ARKANSAS NUCLEAR ONE			Page 3
FORM TITLE:	10CFR50.59 DETERMINATION	FORM NO. 1000.131A	REV. 3

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER974991N202Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

ARKANSAS NUCLEAR ONE			Page
FORM TITLE: 10CFR50.59 SAFETY EVALUATION	FORM NO. 1000.131B	REV. 3 PC-2	

This Document contains 2 Pages.

Document No. ER974991N202 Rev./Change No. 0 10CFR50.59 Eval. No. FFN # 99-090
(Assigned by PSC)

Title ANO-2 Steam Generator Blowdown Filtration Modification

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

The probability of an accident previously evaluated in the SAR will not be increased with the installation of Steam Generator Blowdown Filter (2F-808) in the Startup and Blowdown Demineralizer System. Failure of any component in this system would not affect safe shutdown of the plant. Also, the Steam Generator Blowdown System has no safety related function (with the exception of the piping from the steam generators to and including the containment isolation valves).

2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

This modification will not increase the consequences of an accident previously evaluated in the SAR. 2F-808 meets the same design requirements of the Startup and Blowdown Demineralizer System which along with the Steam Generator Blowdown System is designed with no potentially radioactive release path to the environment.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

This modification does not impact any safety related equipment or systems, the probability of a malfunction of equipment important to safety will not be increased. The Startup and Blowdown Demineralizer and the Steam Generator Blowdown Systems do not perform any safety related function. There are no Seismic II/I issues with the installation of the filter.

4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

No safety related equipment or systems will be affected by this NCP and no release path for radioactivity will be created by this modification, thus, the consequences of a malfunction of equipment important to safety will not be increased. The Startup and Blowdown Demineralizer and the Steam Generator Blowdown Systems have no potential radioactivity release path to the environment. Failure of any component in the system would not affect safe shutdown of the plant.

ARKANSAS NUCLEAR ONE		
FORM TITLE: 10CFR50.59 SAFETY EVALUATION	FORM NO. 1000.131B	Page 2 REV. 3 PC-2

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

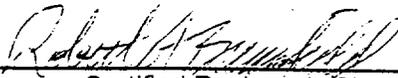
The Design evaluation in the Unit 2 SAR determined that the failure of any component in the Startup and Blowdown Demineralizer and the Steam Generator Blowdown Systems would not affect the safe shutdown of the plant. 2F-808 meets the same design requirements of the Startup and Blowdown Demineralizer System. Because no safety related equipment or systems will be affected by this modification, the possibility of an accident of a different type than any previously evaluated in the SAR has not been created.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

The design evaluations in the Unit 2 SAR determined that a failure of any component in the Startup and Blowdown Demineralizer and the Steam Generator Blowdown Systems will not affect the safe shutdown of the plant. The NCP does not change the system function or failure modes. Therefore, any failure associated with this filter is bounded by previous SAR Accident Analysis.

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

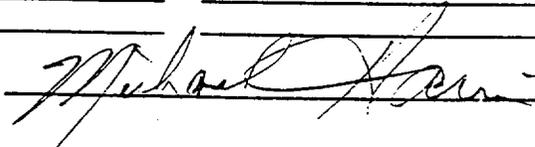
There are no safety margins identified in the Tech Spec Bases that could be reduced by the installation of this NCP.

	Robert A. Brumfield	9/23/99
Certified Reviewer's Signature	Printed Name	Date

Reviewer's certification expiration date: 9/2/01

Assistance provided by:

Printed Name	Scope of Assistance	Date

PSC review by:  Date: 10/14/99

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This Document contains 3 Pages.

Document No. ER974991N203 Rev./Change No. 0

Title 2T94B DEMINERALIZER MODIFICATION FOR SGBD FLOW

Brief description of proposed change:

ER 974991N203 will modify demineralizer 2T94B to operate with as little as 60 gpm from the Steam Generator Blowdown (SGBD) System. Currently SGBD is combined with condensate to meet the minimum flow requirements of the original demineralizer design. Demineralizer 2T94A will not be modified by this NCP and will continue to operate as originally designed. This NCP also installed a bypass line around the demineralizers. This bypass line (2HBD-0813-8") will be installed between the discharge of the condensate pumps and Backpressure Control Valve, 2PCV-4542. After the installation of this NCP, it will be possible to bypass condensate around the demineralizers while the SGBD System is in service. This modification is also required to support changes in secondary chemistry associated with the steam generator replacement. The primary focus of these changes is an increase in secondary pH to remove residual copper in the secondary system prior to 2R14 and to minimized iron transport to the replacement steam generators after 2R14. However, these changes in secondary chemistry are not evaluated by this modification.

Will the proposed Activity:

1. Require a change to the Operating License including:

Technical Specifications (excluding the bases)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Operating License?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Confirmatory Orders?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR (multi-volume set for each unit)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Core Operating Limits Report?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Fire Hazards Analysis?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Bases of the Technical Specifications?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Technical Requirements Manual?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
NRC Safety Evaluation Reports?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

3. Involve a test or experiment not described in the SAR?
(See Attachment 2 for guidance)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.)

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

5. Result in the need for a Radiological Safety Evaluation per section 6.1.5?

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6?

	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAMO?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
E-Plan?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER974991N203Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

This Document contains 1 Page.

Document No. ER974991N203 Rev./Change No. 0 10CFR50.59 Eval. No. 99-046
 (Assigned by PSC)
 Title 2T94B DEMINERALIZER MODIFICATION FOR SGBD FLOW

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

1. Will the probability of an accident previously evaluated in the SAR be increased? Yes No

This NCP will retrofit Demineralizer 2T94B with "Low Flow" laterals to allow the demineralizer to operate with Steam Generator Blowdown Flow only. 2T94A will not be modified by this NCP. This NCP will also install a condensate bypass line (2HBD-813-8") around the demineralizers. The installation of 2HBD-813-8" allows condensate to be returned to the outlet of the demineralizer and back to 2E11B. The installation of this NCP does not change the basic function of the Steam Generator Blowdown (SGBD) System or the Startup and Blowdown Demineralizer (SUBD) System. The operation of the Startup and Blowdown Demineralizer System will be changed to allow 2T94B to operate with SGBD flow only. However, failure of any of the components added or modified by this NCP will not affect any initiators of any of the accidents evaluated in the SAR. Therefore, the probability of an accident previously evaluated in the SAR will not be increased.

2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes No

The Startup and Blowdown Demineralizer System has no potentially radioactive release path to the environment. This NCP is not adding a new release path to the environment. Therefore, this modification will not increase the consequences of an accident previously evaluated in the SAR.

3. Will the probability of a malfunction of equipment important to safety be increased? Yes No

The Startup and Blowdown Demineralizer System does not perform any safety related function. Failure of any component added or modified by this NCP or of any other component in the SUBD System would not affect safe shutdown of the plant. Because the changes involved in this Modification do not impact any safety-related equipment or systems, the probability of a malfunction of equipment important to safety will not be increased.

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4. Will the consequences of a malfunction of equipment important to safety be increased? Yes No

The installation of this NCP involves only modifications to the SUBD System. The SUBD System is normally a non-radioactive system that does not have a potential radioactive release path to the environment. The failure of any components or equipment related to this modification would not impact any system required for the safe shutdown of the plant. Because no safety related equipment or systems will be affected by this NCP and no release path for radioactivity will be created by this modification, the consequences of a malfunction of equipment important to safety will not be increased.

5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes No

The design evaluation in the Unit 2 SAR determined that a failure of any component in the Startup and Blowdown Demineralizer System will not affect the safe shutdown of the plant. The modifications installed by this NCP do not change the system function or failure modes. Therefore, any failure associated with this filter is bounded by previous SAR Accident Analysis.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes No

The types of malfunctions associated with this modification are limited to the failure of components in the Startup and Blowdown Demineralizer Systems. As Discussed in the previous questions, these types of malfunctions are enveloped by the existing failure analysis. Therefore, the changes associated with this modification will not create the possibility of a malfunction of equipment important to safety that is different from those previously evaluated in the SAR

7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes No

There are no safety margins identified in the Tech Spec Bases that could be reduced by the installation of this modification package.

Douglas Edgell

Certified Reviewer's Signature

Douglas Edgell
Printed Name

7/5/99
Date

Reviewer's certification expiration date: 2/3/2001

Assistance provided by:

Printed Name

Scope of Assistance

Date

PSC review by: *JB*

Date: 7/22/99

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Document No. ER975122N201 Rev./Change No. 0

Title High High Containment Pressure Isolation of Main Feedwater

Brief description of proposed change:

975122N201 proposes to automatically isolate main feedwater and main steam flow to the containment building based on containment pressure. The proposed isolation is based on two-out-of-three coincidence logic applied to the four channels of high high containment pressure. The proposed isolation is an addition to MSIS isolation of MFW and MS to/from the steam generators and containment. The combined MSIS and CSAS actuation logic is developed in the auxiliary relay cabinets. Specific changes are:

1. Actuation logic :
 - 1.1. Contacts from two MSIS relays, one in each trip leg, are wired to actuate each component of interest (trip hardening).
 - 1.2. Contacts from two CSAS relays, one in each trip leg, are wired to actuate each component of interest (trip hardening).
 - 1.3. Test relays are wired to allow response time testing from actuation relays to components. One test position (test relay) for each pair of MSIS actuation relays and one test position (test relay) for each pair of CSAS actuation relays provide response time testing capability.
 - 1.4. CIAS subgroup relays (K204 & K213) will be rewired for the MSIS and CSAS function. MSIS subgroup relay K404 will be rewired for the CSAS function.

2. MFW Valves
 - 2.1. The open and close function for the isolation and backup valves includes both MSIS and CSAS actuations. MSIS and CSAS contacts are wired such that single MSIS or CSAS actuation relay failure (de-energization) will not fail valve closed or prevent the valve from closing.
 - 2.2. MFW isolation and backup valve circuits for thermal overload function will include CSAS contacts.
 - 2.3. MSIS and CSAS overrides to allow opening the MFMIVs during emergency operation (outside the design bases where EFW1 and EFW2 both failed).

3. Main Feedwater Pumps
 - 3.1. MSIS and CSAS contacts are wired to the MFW turbine electronic trip such that a single relay failure (de-energization) will not trip the turbine or prevent a legitimate trip.
 - 3.2. MSIS and CSAS contacts are wired to the MFW turbine mechanical trip such that a single relay failure (de-energization) will not trip the turbine or prevent a legitimate trip demand. The mechanical trip provides a diverse backup to the electronic trip including power source.
 - 3.3. ESFAS contacts deletion in the MFW turbine electronic trip reset scheme.

4. MSIVs
 - 4.1. MSIS and CSAS contacts are wired to each trip solenoid and flyback relay such that single relay failure (de-energization) will not result in MSIV closure or prevent a legitimate demand to close. The redundant trip scheme necessary for energize to trip circuits will remain intact for each MSIV.

5. Condensate and Heater Drain Pumps

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- 5.1. Capability for either actuation channel to trip the condensate and heater drain pumps is added by application of MSIS and CSAS contacts from both actuation channels. Contacts from either energize to actuate local relay MFWIS1 (channel 1) or MFWIS2 (channel 2) will trip the four condensate and two header drain pumps.
6. Redundant Type Actuation Logic.
- 6.1. Table 3.3-3 (TS) states only one of two actuation channels are required to isolate MFW.
- 6.2. Second channel trip added to
- 6.2.1. MFW pumps
- 6.2.2. Condensate pumps
- 6.2.3. Heater drain pumps
- 6.3. Second channel trip maintained for
- 6.3.1. MSIVs
- 6.3.2. MFW combination of isolation and backup valves
7. MFW Regulating and Bypass Valves
- 7.1. Deletion of MSIS closure of MFW regulating and bypass valves.

Will the proposed Activity:

1. Require a change to the Operating License including:
- Technical Specifications (excluding the bases)? Yes No
- Operating License? Yes No
- Confirmatory Orders? Yes No
2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:
- SAR (multi-volume set for each unit)? Yes No
- Core Operating Limits Report? Yes No
- Fire Hazards Analysis? Yes No
- Bases of the Technical Specifications? Yes No
- Technical Requirements Manual? Yes No
- NRC Safety Evaluation Reports? Yes No
3. Involve a test or experiment not described in the SAR? (See Attachment 2 for guidance) Yes No
4. Result in a potential impact to the environment? (Complete Environmental Impact Determination of this form.) Yes No
5. Result in the need for a Radiological Safety Evaluation per section 6.1.5? Yes No
6. Result in any potential impact to the equipment or facilities utilized for Ventilated Storage Cask activities per Section 6.1.6? Yes No

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7. Involve a change under 10CFR50.54 for the following SAR documents per Section 6.1.7?

QAMO?

Yes No

E-Plan?

Yes No

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3-PC-1,2

Document No. ER975122N201Rev./Change No. 0**Basis for Determination (Questions 1, 2, & 3):**

1. Require a change to the Operating License including:

Search of the Operating License verified no deviations are created by CSAS isolation of main feedwater and main steam. No surveillance impacts were identified. Determination of the CSAS isolation impact on process parameters will be evaluated by the steam generator replacement and power uprate projects. The existing design credits CSAS, CCAS, and MSIS for mitigating MS or MFW line breaks in containment. Applicability of LCO 3.3.2.1 as shown in Table 3.3-3 addresses MS and MFW isolation (MSIS) for overcooling and containment leak protection. **This modification will apply CSAS signal to terminate MFW and MS for the containment leak protection function.** Since CSAS signals are already credited for containment leak protection, Table 3.3-3 changes should not be required. Since TS Table 3.3-3 states that one channel of actuation logic can isolate MFW; redundant type logic is considered a requirement for this modification. CR-2-99-0282 identified both channels of MSIS are required to isolate MFW.

2. Result in information in the following SAR documents (including drawings and text) being (a) no longer true or accurate, or (b) violate a requirement stated in the document:

SAR revisions are required to show redundant type MSIS actuation logic for MS and MFW isolation. SAR revisions are also required to reflect redundant type CSAS actuation of MS and MFW isolation.

3. Involve a test or experiment not described in the SAR?

Startup test for the modified equipment will be performed in a plant mode that does not impact operability of required safety related equipment.

- Proposed change does not require 10CFR50.59 Evaluation per Attachment 1, Item # ____ (If checked, note appropriate item #, send LCD to Licensing).

Search Scope:

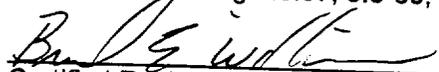
List sections reviewed in the Licensing Basis Documents specified in questions 1, 2 and 3. If a keyword search was done on LRS, "all" may be entered under "Section" with the keyword(s) used in parentheses. Controlled hard copies of the documents shall be reviewed (LRS is not verified and searches only text, not figures or drawings). **Attach and distribute a completed LDCR per Section 6.1.2 if LBD changes are required.**

Document Section

LRS: "All" (main feedwater, main steam, containment, MSIS, CCAS, break w/10 line, MSIS w/10 main, main w/10 isolation, 2CV10232, 2CV10732, 2CV10241, 2CV10741, 2A1, 2A2), CSAS, override, bypass

MANUAL SECTIONS:

FIGURES: Fig 8.3.57, 8.3-60, 8.3-109 sh 3, 8.3-109 sh5, 7.3-9 sh1, 3, & 4, 10.2-4, 10.2-3


Certified Reviewer's Signature

Burl E. Williams

Printed Name

3/25/98

Date

Reviewer's certification expiration date: 5/3/2000

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Assistance provided by:

Printed Name	Scope of Assistance	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Search Scope Review Acceptability (NA, if performed by Technical Reviewer per 1000.006)

<i>Mark A. Spinelli</i> Certified Reviewer's Signature	Mark Spinelli Printed Name	<i>2/28/00</i> Date
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ENVIRONMENTAL IMPACT DETERMINATION (UNIT 1 and UNIT 2)

Document No. ER975122N201Rev./Change No. 0

Complete the following Determination. If the answer to any item below is "Yes", an Environmental Evaluation is required. See Section 6.1.4 for additional guidance.

Will the Activity being evaluated:

YesNo

- | | | |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)? See Unit 2 SAR Figure 2.5-17. This applies only to areas outside the protected area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase thermal discharges to lake or atmosphere? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase concentration of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of cooling tower which will change drift characteristics? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Install any new transmission lines leading offsite? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharges any chemicals new or different from that previously discharged? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially cause a spill or unevaluated discharge which may effect neighboring soils, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burying or placement of any solid wastes in the site area which may effect runoff, surface water or ground water? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve incineration or disposal of any potentially hazardous materials on the ANO site? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a change to nonradiological effluents or licensed reactor power level? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Potentially change the type or increase the amount of non-radiological air emissions from the ANO site. |

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1. Will the probability of an accident previously evaluated in the SAR be increased?

SAR section 15.1.8, Loss of Normal Feedwater Flow, defines loss of normal feedwater flow as reduction in FW flow without corresponding reduction in steam flow. Initiation of steam flow to feedwater flow mismatch could occur as a result of tripping a condensate or feedwater pump, or closing a regulating, isolation, or backup valves. The likelihood of ESFAS causing a loss of MFW will be reduced. The reduction is achieved by deletion of single active ESFAS relay failures. In addition, the removal of the solenoids and circuits associated with closing the regulating valves will further reduced the initiators. It is concluded that the reduction of initiators has reduced the probability of loss of normal feedwater flow.

SAR section 15.1.14.1, Steam Line Break Accident, accident initiators are not impacted by this NCP.

SAR section 15.1.14.2, Feedwater Line Break Accident, accident initiators are not impacted by this NCP.

Initiators for SAR section 15.1.36, Transients Resulting From the Instantaneous Closure of a Single MSIV, are insignificantly impacted. As long as both MSIVs use the same actuation relays with different contacts applied to the valves, single valve closure initiated by relay circuit failures is not credible.

Conclusion

Reliability of the overall secondary system response to main steam line breaks or main feedwater line breaks in containment has increased. This reliability increase is partially the result of using containment building pressure as well as steam generator low pressure to initiate isolation of the systems from containment atmosphere. In addition the use of backup trips, reduction in passive failures, elimination of non-credited circuits, and elimination of single active actuation relay failures will improve reliability of the MFW and MS systems. The probability of an accident previously evaluated in the SAR will decrease.

2. Will the consequences of an accident previously evaluated in the SAR be increased?

SAR section 15.1.8, Loss of Normal Feedwater Flow. Since the analysis assumes complete loss of main feedwater the consequences aren't impacted.

SAR section 15.1.14.1, Steam Line Break Accident. The use of CSAS with the MSIS actuation of mitigation equipment maintains existing mitigation for overcooling events; yet, provides backup for maintaining containment leak specifications.

SAR section 15.1.14.2, Feedwater Line Break Accident. The consequences are similar to the steam line break above. The CSAS addition will provide protection against a feedwater line break located between the containment penetration and the feedwater check valves. Operator action to isolate main feedwater for these break locations will not be required for mitigation.

Dose consequences for SAR section 15.1.36, Transients Resulting From the Instantaneous Closure of a Single MSIV, are not altered by CSAS addition. As long as both MSIVs use the same actuation relays with different contacts applied to the valves, single valve closure initiated by relay circuit failures is not credible.

With a LOCA initiation of high high containment pressure, secondary plant heat removal via the condenser will be eliminated by this modification. Main steam line safeties and atmosphere dumps

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located upstream of the MSIVs will remain functional. EFAS (EFW) will remain functional for SG FOGG logic and level control.

Conclusion: The ESF control signals (MSIS, EFAS1, and EFAS2) mitigation of the above accidents that were previously evaluated in the SAR will not be altered.

3. Will the probability of a malfunction of equipment important to safety be increased?

Malfunctions of non-Q and Q equipment required for mitigating overcooling and for maintaining containment leak integrity during main feedwater or main steam line breaks are considered. For the two events, low steam generator pressure initiation of MSIS has not been degraded. The possibility of MSIS actuation logic failure to actuate mitigation equipment has been decreased. Credit is given to the application of redundant type actuation logic for MFW termination.

Redundant type additions of CSAS contacts to selected components ensure containment leak integrity. Containment building pressure provides direct sensing and improved mitigation response to potential containment over pressurization by MFW or MS line break in containment.

Addition of backup trip means to the main feedwater pumps, train alignment of power sources, and deletion of unnecessary MSIS contact applications will improve reliability.

To improve reliability, degradation of normal MFW flow by single active ESFAS relay failure is eliminated by use of two relays for each stop or close function. Only single active failure considerations are mandatory per the license basis. Reference LIC-98-087 for further discussion of license basis. With the addition of redundant type actuation logic, single ESFAS relay failure to actuate (de-energize) will not prevent a component trip. Although not required, passive failures were considered with certain improvements implemented in the actuation logic design.

Conclusion: The probability of a malfunction of equipment important to safety has been reduced by reliability improvements that include redundant type trips and use of CSAS in addition of MSIS to protect the containment building.

4. Will the consequences of a malfunction of equipment important to safety be increased?

The design emphasizes the application of single active failure criterion as established for the existing license basis. The license basis permits no more than one component level functional failure for mitigating a MFW or MS line break. Redundancy for mitigating MFW or MS line breaks does not exist. Assuming offsite power available, the existing license basis, as defined by the SGR and Power Uprate projects, allows no more than one failure for the following:

- Both trains of CSAS must function (credited for containment integrity only) and
- Both trains of CCAS must function (credited for containment integrity only) and
- Both trains of HPSI must function (credited for overcooling only) and
- No condensate pump shall fail to stop and
- No main feedwater pump shall fail to stop and
- No heater drain pump shall fail to stop and
- Neither MFW pair of backup or isolation valves shall fail to close (backup and isolation valves may not close with more than one HD, CS, or MFW pump running) and
- Both MSIVs shall close

Conclusion: Since this NCP maintains this basis that is applied in the safety analysis, the consequences of a malfunction of credited equipment for MS or MFW line breaks in containment will not result in exceeding the containment leak limits. From a control point, analysis considering a LOOP is bounded by the case with off site power available.

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5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created?

The typical types of accidents that could be created by this modification are loss of normal feedwater and closure of the MSIVs. Chapter 15.1.18 and Chapter 15.1.36 previously evaluated loss of MFW and closure of a single MSIV. Inadvertent terminations of main feedwater or isolation of main steam introduced by the use of CSAS are bounded by similar MSIS initiated events. Note this evaluation is limited to the control modifications.

Depending on containment pressure response, a MFW line break upstream of the MFW check valves could automatically actuate MFW and MS isolation from containment. This break previously required operator action to terminate MFW.

Secondary plant heat removal with LOCA induced high high containment pressure will be retained. EFAS1 and EFAS2 will control steam generator level with pressure control by MS line safeties and/or upstream atmosphere dump valves. The capability to dump to the condenser will be defeated by MSIV closure. With the steam generator tube rupture events, containment pressure does not respond.

Conclusion: The possible accident types post modification are similar to the existing system design.

6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created?

Except for MS and MFW line breaks, redundancy in mitigation equipment compensates for single active and passive power train and ESFAS auxiliary relay cabinet failures. Part of the mitigation equipment for MS and MFW line breaks is not safety grade, has limited redundancy, and does not consider passive failures. This modification adds diversity in stopping the main feedwater pumps by using both DC power and ESFAS trains. Either train will actuate stopping of the MFW pumps. The proposed MFW pump stop circuit design is similar to the existing MSIV design. Both circuits feature dependency on DC power with two solenoids actuated by independent ESFAS contacts. With this circuit arrangement, failure to stop a main feedwater pump is limited to unlikely failures of hydraulic fluid controlled components. This modification reduces the possibility of MFW pump failure to trip.

Redundant type actuation logic is being incorporated into the trip schemes for the heater drain and condensate pumps. This design consideration reduces the possible actuation logic malfunctions.

Conclusion: Since familiar components are used in the design different type failures are not introduced. Consideration of the failure types has reduced the possibility of system level malfunctions with out introducing new types.

7. Will the margin of safety as defined in the bases for any technical specification be reduced?

Search of the TS bases indicates CSAS, CCAS, and MSIS are required to mitigate events associated with the primary system. Other than 3/4.7.1.5 bases, margin of safety associated with mitigation of containment over pressurization or leak integrity was not identified. 3/4.7.1.5 addresses MSIV limiting containment pressure with MS rupture in containment. Addition of CSAS actuation of MSIV closure maintains this bases. Section 3/4.6, Containment Systems was reviewed with no bases identified that credit main feedwater isolation for containment leak/pressure control.

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Conclusion: Review of bases indicates margin of safety will not be reduced.

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FORM TITLE:

10CFR50.59 SAFETY EVALUATION

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REV.

003-04-0

This Document contains 5 Pages.

Document No. ER 980066P201 Rev./Change No. 1 10CFR50.59 Eval. No. FFN# 00-079

(Assigned by PSC)

Title S. W. Traveling Screen Upgrades.

A WRITTEN RESPONSE PROVIDING THE BASIS FOR THE ANSWER TO EACH QUESTION MUST BE ATTACHED. EACH QUESTION MUST BE ANSWERED SEPARATELY. A SIMPLE STATEMENT OF CONCLUSION IS NOT SUFFICIENT. ATTACHMENT 2 PROVIDES GUIDANCE FOR RESPONSE.

If the answer to any question on this form is "Yes," then an unreviewed safety question is involved. If the answer to all questions is "No," then the proposed change does not involve an unreviewed safety question.

- 1. Will the probability of an accident previously evaluated in the SAR be increased? Yes [] No [X]
2. Will the consequences of an accident previously evaluated in the SAR be increased? Yes [] No [X]
3. Will the probability of a malfunction of equipment important to safety be increased? Yes [] No [X]
4. Will the consequences of a malfunction of equipment important to safety be increased? Yes [] No [X]
5. Will the possibility of an accident of a different type than any previously evaluated in the SAR be created? Yes [] No [X]
6. Will the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR be created? Yes [] No [X]
7. Will the margin of safety as defined in the basis for any technical specification be reduced? Yes [] No [X]

Handwritten signature of W. G. Donovan

W. G. Donovan
Certified Reviewer's Signature

WG DONOVAN

Printed Name

7 / 18 / 2000

Date

Reviewer's certification expiration date: 10 / 5 / 2000

Assistance provided by:

Printed Name

Ted Ivy

Scope of Assistance

Review of answered questions for adequacy.

Date

7 / 18 / 2000

PSC review by:

Handwritten signature

Date:

7/27/2000

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Document No. ER 980066P201 Rev./Change No. 1

10CFR50.59 Review Continuation Page

General Background Information :

This change affects the Unit 2 Service Water traveling screens and the associated screen wash piping. The modified components meet, or exceed, the original design requirements of the system. The Unit 2 Service Water system, which is the only system that takes its suction downstream of these traveling screens, has a maximum flow rate of approximately 22,000 GPM during normal operation. There are two traveling screens installed in the intake structure and each are designed to provide a minimum flow rate of 33,000 GPM. This provides a normal operation design safety factor of 3. When one screen is out of service for cleaning/repair, the other screen still provides an operational design safety factor of 1.5. The new traveling screens are designed to keep smaller debris, 3/16" diameter or larger, from entering into the Service Water pump suction piping than the existing design. They meet all the original design requirements for expected flow conditions and loading. Since more debris will be screened out, increased debris removal rates are required. Therefore, this modification also improves the screen wash capability. The smaller debris screening requirements will increase the differential pressure across the screens at design flow rates since the mesh size went from 3/8" down to 3/16", but this increase is not significant and is well within the capability of the screens. The existing operational alarm set points for differential water levels across the screens are not being modified by this change package.

Question # 1 :

These modifications will not increase the probability of any accidents described in Chapter 15 of the SAR. The one accident described in Chapter 15 of the SAR, section 15.1.30 that is applicable to this package is "Loss of Service Water System". This modification package improves the ability of the traveling screens to keep debris from entering the Service Water system. Thus, this reduces the probability of loss of Service Water system while operating on lake water due to excessive debris collection in the Service Water system strainers. The new screens also exceed all original design requirements for operating at expected maximum system flow rates and loading. Therefore the probability of their failure is not increased.

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Document No. ER 980066P201Rev./Change No. 110CFR50.59 Review Continuation PageQuestion # 2 :

The consequences of an accident previously evaluated in the SAR will not be increased by implementing this modification. The ultimate heat sink for service water is the emergency cooling pond not the lake. As a result the screens are not safety related. The new screens meet all the original design requirements and have also had improvements made to improve their operating capability. As a result the new screens will be as reliable as the original screens for all operating conditions. If complete traveling screen system failure were to occur, i.e., both screens declared inoperable due to a malfunction or due to fouling, the Service Water system fluid needs would be transferred to the Emergency Cooling Pond. As a result the previously analyzed offsite dose consequences would be unaffected by a failure of the traveling screens.

Question # 3 :

This modification improves the screening capabilities of the traveling screens and screen wash system. Thus, decreasing the probability of a malfunction of equipment important to safety by decreasing the probability of the Service Water system strainers, downstream of the main service water pumps 2P4A, 2P4B and 2P4C, becoming plugged due to debris entering the system via the old traveling screen design. All new piping and components associated with this modification meet or exceed the specifications and requirements of the existing system, which assures their function under all expected design conditions. As a result the probability of a failure of the screens is not increased.

Question # 4 :

The new design screens meet or exceed all original design requirements. Based upon the modification being proposed by this change package, the consequences of a malfunction of equipment important to safety are not increased or decreased. Failure of the traveling screen system to properly provide the required fluid flows for the Service Water system has been previously analyzed. It would result in transference of the Service Water system fluid needs to the Emergency Cooling Pond, which is the same consequence as before this modification. This change has not impacted the equipment previously analyzed to be affected by a failure of the traveling screens.

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Question # 5 :

The modifications being performed on the Service Water traveling screen and screen wash system do not create the possibility of a different type of accident occurring than were already evaluated in the SAR. The new screens meet or exceed all the original design requirements and have been upgraded to reduce the potential for failing to perform their function by adding additional cleaning capability and component improvements. The flows through the screens are unaffected by this modification since they are determined by Service Water system flows. The pressure drops are slightly increased due to the smaller mesh size but are well within the design capability as maximum design conditions. As a result no new failure modes for the traveling screens are created. The failure of the screens would only directly impact the Service Water pumps and system. The loss of lake water flow to the Service Water system has been previously evaluated and this modification does not affect this analysis. No other systems would be impacted by the failure of the screens.

Question # 6 :

Installation of this modification will not create a credible new type of malfunction of the traveling screens or the screen wash system. The new screens meet all the original design requirements and have also had improvements made to improve their operating capability. As a result they new screens will be as reliable as the original screens for all operating conditions. This modification will increase the performance capability of the traveling screens to minimize the amount of debris entering the Service Water system. Failure of the traveling screen system to properly provide the required fluid flows for the Service Water system has been previously analyzed. The failure of the screens would only directly impact the Service Water pumps and system whose failure has been analyzed. Therefore, the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR will not be created.

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The modifications associated with this package will not affect the margin of safety as defined in the basis for any Technical Specifications. This change improves the capability of the traveling screens in protecting the Service Water system from debris in the lake that could result in the loss of a Service Water pump. The new screens meet or exceed the original screen's capabilities. As a result the availability/reliability of the Service Water pumps should be improved by this change. The function of the Service Water system or the traveling screens is not affected by this package. No other systems are impacted by this change. The margins of safety will therefore not be adversely affected nor reduced by this change.