

**NUCLEAR POWER DEPARTMENT
SAFETY EVALUATION REPORT**

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Title of Proposed Modification,
Procedure Change, Test or Experiment: MR 96-069*A, "Replace Breakers in 1Y-06"; MR 96-069*B, "Replace Breakers in 1Y-05".

Reference Document(s) #: CR 96-539, Calculation 96-0245, Calculation 97-0024, 1Y-05-01 - WO 9612055, 1Y-05-05 - WO 9612029, 1Y-05-06 - WO 9612014, 1Y-05-22 - WO 9612012, 1Y-06-01 - WO 9612072, 1Y-06-03 - WO 9612057, 1Y-06-05 - WO 9612056, and 1Y-06-11 - WO 9612073.

Prepared By: _____	Date: <u>02-26-97</u>
Reviewed By: _____	Date: <u>2-27-97</u>
Reviewed by Multidisciplinary Design Team: 1. _____	Date: <u>2-27-97</u>
2. _____	Date: <u>2-26-97</u>
MSS Review/Date: _____	MSS #: <u>97-04</u>
Manager - PBNP Approval: <u>(see pbf-0026d for reviews)</u>	Date: <u>02/27/97</u>

In lieu of MSS and Manager signature, attach PBF-0026d if serial review has been conducted. (MSS and manager approvals are not necessary for a determination of non-applicability.)

Section I
Screening - Determination if Safety Evaluation is Required

A. Describe the modification, procedure change, test, or experiment and its expected effects. Include interim configurations or conditions.

Modifications MR 96-069*A and MR 96-069*B involve the replacement of the molded-case circuit breakers for eight circuits in non-safety related 120 VAC instrument panels 1Y-05 and 1Y-06. The affected circuits are 1Y-05-01, 1Y-05-05, 1Y-05-06, 1Y-05-22, 1Y-06-01, 1Y-06-03, 1Y-06-05, and 1Y-06-11. Action item #2 of condition report CR 96-539 identifies that the existing breakers for these circuits do not provide adequate short-circuit protection for the internal main control board wiring in the circuits. A short-circuit fault on one of the circuits could therefore result in damage to not only the circuit conductors, but also the adjacent conductors for safety related circuits. This condition has been evaluated for operability in the CR.

Modifications MR 96-069*A and MR 96-069*B will replace the existing circuit breakers for the eight non safety related circuits identified above with breakers having lower trip ratings. The final design descriptions for MR 96-069*A and MR 96-069*B document the acceptability of the replacement breakers in providing fault protection for the main control board conductors in these circuits. The modifications will therefore eliminate the potential for conductor damage in these circuits under short circuit conditions, and will thus eliminate the potential for damage to adjacent safety related conductors. The final design descriptions also verify that the new lower trip ratings provide adequate load carrying capacity for normal operation current demands and will not result in spurious breaker trips.

There are several factors important to the installation of these breakers that are important to safely performing the breaker change-out. These breakers were changed out in 1995, new inserts were installed to facilitate installation of the new style breakers, all hardware was torqued to manufacturer specifications, and the mechanic-electricians are experienced with replacement of these breakers. The breakers will be changed out one at a time. The change-out of service time is fifteen to twenty minutes, which reduces the amount of time the plant is impacted by the breaker change-out. During installation, Unit 2 will be defueled and Unit 1 will be shutdown.

in cold or hot shutdown.

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The following is a list of the equipment that is non safety related which will require steps to be taken to ensure no impact on safety related equipment will occur:

- 1Y-05-06 Priming air ejectors are required to be secured.
- 1Y-05-06 Steam Generator Blowdown is required to be secured due to outlet tank valve going shut.
- 1Y-05-22 RC-431A/B PZR spray line control solenoid and switch will be deenergized. Spray valves shut prior to opening brkr. Auxiliary spray via CVCS is available.
- 1Y-05-22 RCP vibration and smoke detector panel will be deenergized.
- 1Y-06-01 Turning gear required to be operated in manual.
- 1Y-06-01 Local flow and remote alarm indication will be lost for CCW to the seal water heat exchangers for P-10A/B (RHR pumps), P-14A/B (Containment Spray pumps), and P-15A/B (Hi Heat SI pumps).
- 1Y-06-01 Heating boiler day tank loss of alarm and filling capability, loss of ability to fill the Emergency Fuel Oil Tank.
- 1Y-06-01 Loss of alarm for G01 and G02 day tank level alarms (alarm only, auto fill available).
- 1Y-06-01 Steam generator sample isolation will be required.
- 1Y-06-03 Steam Generator Blowdown is required to be secured due to control valves going shut.
- 1Y-06-03 Solenoid from service water to the bearings on IP-29 (Steam Driven Aux Feed pump) will fail open.
- 1Y-06-03 Both P-116 pump need to be secured due to loss of power to the hand controllers for the valves associated with the P-116s (Boric Acid Storage Tank recirc pumps).
- 1Y-06-03 The alarm function for condenser vacuum will be secured.

This safety evaluation is being written to cover both the modification and installation.

- B. List the FSAR sections or VSC-24-SAR sections where the system, structure, component, procedure, test or experiment is described
- Neither the 1Y-05 or 1Y-06 panels, nor the breakers to be replaced are described in the PBNP FSAR. ^T neither the 1Y-05 or 1Y-06 panels, nor the breakers to be replaced, nor the associated loads are described in the PBNP FSAR, Section 4.2 (PZR spray valves), Section 9.2 (P-116s Boric acid recirc pumps), and Section 9.6.2 (SW to IP-29 turbine driven aux feed pump bearings solenoid).*
- 2-27-97
- C. Does the change, test or experiment involve a change in the Technical Specification? Yes No
- If a change is required, briefly describe what the change should be and why it is required.
- NOTE: NRC approval is required prior to implementation.

D. Screening for 10 CFR 50.59 and 10 CFR 72.48 Applicability:

1. 10 CFR 50.59 Screening:

- a. Will any system, structure or component (SSC) described in the PBNP FSAR, including its figures, be altered? (Refer to NP 10.3.1, step 3.1.2 for exception. This question may be answered "no" although the SSC is described in the PBNP FSAR.) Yes No
- b. Could, within reasonable possibility, the proposed change affect the intended design, operation, function, or method of function, of an SSC important to safety which is described in the PBNP FSAR? (This includes interim conditions.) Yes No
- c. Will any procedure described in the PBNP FSAR be altered? (Refer to NP 10.3.1, Attachment A, Part E, for guidance.) Yes No
- d. Will a test or experiment be performed which is not described in the PBNP FSAR and affects the design, operation, function, or method of function, of an SSC important to safety which is described in the PBNP FSAR? Yes No

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- e. Will implementation affect a prior documented regulatory commitment to the NRC pertaining to the design, operation, function, or method of function, of an SSC important to safety which is described in the PBNP FSAR? Yes No
- f. Is a 10 CFR 50.59 evaluation required (are any of the above questions answered yes)? Yes No

*NOTE: If no, then provide basis for decision in Part D.
If yes, complete Sections 2 and 3.*

2. 10 CFR 72.48 Screening for the Independent Spent Fuel Storage Installation (ISFSI):

- a. Will any system, structure, or component (SSC) described in the ISFSI Licensing Basis document, including its figures, be altered? (Refer to Step 3.1.2 for exception. This question may be answered "no" although the SSC is described in the ISFSI Licensing Basis documents.) Yes No
- b. Could, within reasonable possibility, the proposed change affect the intended design, operation, function, or method of function, of an SSC important to safety which is described in the ISFSI Licensing Basis documents? (This includes interim conditions.) Yes No
- c. Will any procedures described in the ISFSI Licensing Basis documents be altered? Yes No
- d. Will a test or experiment be performed which is not described in the ISFSI Licensing Basis documents and affects the design, operation, function, or method of function, of an SSC important to safety which is described in the ISFSI Licensing Basis documents? Yes No
- e. Will implementation affect a prior documented regulatory commitment to the NRC pertaining to the design, operation, function, or method of function, of an SSC important to safety which is described in the ISFSI Licensing Basis documents? Yes No
- f. Is a 10 CFR 72.48 evaluation required (are any of the above questions answered yes)? Yes No

*NOTE: If no, then provide basis for decision in Part D.
If yes, complete Sections 4 and 5.*

D. Basis for determination that a safety evaluation is not required:

Since none of the described breaker change outs affect the ISFSI or design description, operator or function of an ISFSI SSC or any ISFSI licensing document, a 10 CFR 72.48 evaluation is ^{not} required.

Section 2
Determination if a 10 CFR 50.59 Unreviewed Safety Question is Involved

* 02-27-97

A. List the licensing basis documents (FSAR, SER, etc.) and sections where the system, structure, component, procedure, test, or experiment is described.

Neither the 1Y-05 or 1Y-06 panels, nor the breakers to be replaced ^{are described in the PBNP FSAR.} the associated loads are described in the PBNP FSAR, Section 4.2 (Per spray valves), Section 9.2 (P-1166 Boric acid recirc pumps), and Section 9.6.2 (SLO to 1P-29 turbine driven aux feed pump bearing solenoid).

- B. 1. Does the proposed activity increase the probability of occurrence of an accident previously evaluated in the PBNP FSAR? Yes No

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The breakers and the respective equipment removed from service do not initiate any of the accidents listed in the FSAR. The equipment affected by this project is non safety related equipment. Unit 1 will be ^{in hot or cold} shutdown and the change out will be performed one breaker at a time. The new breakers are physically similar to the current ones. Their lower trip settings have been evaluated in the modification package to provide adequate fault protection while maintaining adequate current carrying capability. Operations will review the list of affected equipment prior to each change out. ~~Each change out is expected to take about 15-20 minutes.~~ Therefore, the breaker change-outs do not increase the probability of occurrence of an accident previously evaluated in the PBNP FSAR.

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2. Does the proposed activity increase the consequences of an accident previously evaluated in the PBNP FSAR? Yes No

The scope of work, breaker replacement, is equipment classified as non safety related equipment. Equipment that is powered from the breakers that supports important to safety equipment will be placed in a safe condition prior to and during breaker replacement work. 1Y05 is lost on a LOOP and not assumed to be available during accident conditions. 1Y06 is feed from 1B32 and as such is supplied by emergency power during a LOOP. While the pressurizer spray valves are closed, auxiliary spray will be available from CVCS. G01 and G02 day tanks will still have auto fill capability when the level alarms are deenergized. The new breakers and their associated trip settings will ensure operability of all loads in the circuit. Unit 1 will be shutdown during the installation. Therefore, equipment important to safety impacted by the breaker change out will meet all design requirements and be able to properly respond to any evaluated accident, thus ensuring that there are no increases to previously evaluated accident consequences.

3. Does the proposed activity increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the PBNP FSAR? Yes No

The non safety related breakers are a physically similar replacement. The replacement breakers have a lower interrupting rating than the previously installed breakers which is more conservative for fault protection. The replacement breakers will reduce probability that faults on the non safety related circuits will cause damage to safety related wiring. The final design descriptions verify that the new lower trip ratings provide adequate load carrying capacity for normal operation current demands and will not result in spurious breaker trips. Therefore the change in the breakers do not increase probability of the breakers to perform their designed function.

There are several factors important to the installation of these breakers that are important to safely performing the breaker change-out. These breakers were changed out in 1995, new inserts were installed to facilitate installation of the new style breakers, all hardware was torqued to manufacturer specifications, and the mechanic-electricians are experienced with replacement of these breakers. The breakers will be changed out one at a time. Other breakers in the panel will not be affected. ~~The change-out out of service time is fifteen to twenty minutes which reduces the amount of time the plant is impacted by the breaker change-out.~~ During installation, Unit 2 will be defueled and Unit 1 will be shutdown. Therefore, probability of a malfunction will not change.

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in hot or cold

4. Does the proposed activity increase the consequences of a malfunction of equipment important to safety previously evaluated in the PBNP FSAR? Yes No

The proposed activity does not increase the consequences of a malfunction. There is no effect upon the important to safety equipment for which support is provided by the equipment that is isolated by the breaker. The new breakers and their revised trip settings will not adversely affect the operation of equipment being supplied by these breakers. During installation, Unit 1 will be ^{in hot or cold} shutdown and the breakers changed out one at a time. Operations will review the affected equipment prior to replacement of each breaker. While the pressurizer spray valves are closed, auxiliary spray will be available from CVCS. G01 and G02 day tanks will still have auto fill capability when the level alarms are deenergized. Therefore, consequences of a malfunction will not change.

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5. Does the proposed activity create the possibility of an accident of a different type than any previously evaluated in the PBNP FSAR? Yes No

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None of the breaker replacements would create the possibility of an accident different than what is currently in the FSAR. The new breakers and their associated trip settings will ensure operability of all loads in the circuit. Unit 1 will be shutdown during the installation. No new failure mechanisms will be created, the system is fundamentally the same.

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6. Does the proposed activity create the possibility of a malfunction of equipment important to safety of a Yes No different type than any previously evaluated in the PBNP FSAR?

The breaker replacement reduces the possibility of a malfunction of safety related wiring circuits in the main control board cable raceways that are adjacent to the breaker feeder wire by providing adequate breaker coordination and protection of circuit wiring from overcurrent conditions. The new breakers and their associated trip settings will ensure operability of all loads in the circuit. Unit 1 will be shutdown during the installation. No new failure mechanisms will be created, the system is fundamentally the same. Therefore, the possibility of different malfunction to important to safety related equipment is not created.

7. Does the proposed activity reduce the margin of safety defined in the Basis for any Technical Specification? Yes No

The replacement of the breakers does not reduce the margin of safety defined in the basis of Technical Specifications. The new breakers and their associated trip settings will ensure operability of all loads in the circuit. Unit 1 will be shutdown during the installation. Operations will review the list of affected equipment prior to each change out.

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- DOES THE CHANGE, TEST, OR EXPERIMENT INVOLVE A 10 CFR 50.59 UNREVIEWED SAFETY QUESTION? (IS THE ANSWER TO ANY OF THE ABOVE QUESTIONS YES?) Yes No

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Section 3
10 CFR 50.59 Evaluation Summary

(This summary must be sufficiently complete [summary of description in Section 1, summary of the answers to the questions in Section 2, and a concise conclusion] to submit to the NRC for review.)

Modifications MR 96-069*A and MR 96-069*B involve the replacement of the molded-case circuit breakers for eight circuits in non-safety related 120 VAC instrument panels 1Y-05 and 1Y-06. The affected circuits are 1Y-05-01, 1Y-05-05, 1Y-05-06, 1Y-05-22, 1Y-06-01, 1Y-06-03, 1Y-06-05, and 1Y-06-11. Action item #2 of condition report CR 96-539 identifies that the existing breakers for these circuits do not provide adequate short-circuit protection for the internal main control board wiring in the circuits. A short-circuit fault on one of the circuits could therefore result in damage to not only the circuit conductors, but also the adjacent conductors for safety related circuits. This condition has been evaluated for operability in the CR.

Modifications MR 96-069*A and MR 96-069*B will replace the existing circuit breakers for the eight non safety related circuits identified above with breakers having lower trip ratings. The final design descriptions for MR 96-069*A and MR 96-069*B document the acceptability of the replacement breakers in providing fault protection for the main control board conductors in these circuits. The modifications will therefore eliminate the potential for conductor damage in these circuits under short circuit conditions, and will thus eliminate the potential for damage to adjacent safety related conductors. The final design descriptions also verify that the new lower trip ratings provide adequate load carrying capacity for normal operation current demands and will not result in spurious breaker trips.

There are several factors important to the installation of these breakers that are important to safely performing the breaker change-out. These breakers were changed out in 1995, new inserts were installed to facilitate installation of the new style breakers, all hardware was torqued to manufacturer specifications, and the mechanic-electricians are experienced with replacement of these breakers. The breakers will be changed out one at time. The change-out of service time is ^{specialized rate} fifteen to twenty minutes, which reduces the amount of time the plant is impacted by the breaker change-out. During installation, Unit 2 will be defueled and Unit 1 will be shutdown.
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The following is a list of the equipment that is non safety related which will require steps to be taken to ensure no impact on safety related equipment will occur:

- 1Y-05-06 Priming air ejectors are required to be secured.
- 1Y-05-06 Steam Generator Blowdown is required to be secured due to outlet tank valve going shut.
- 1Y-05-22 RC-431A/B PZR spray line control solenoid and switch will be deenergized. Spray valves shut prior to opening brkr. Auxiliary spray via CVCS is available.
- 1Y-05-22 RCP vibration and smoke detector panel will be deenergized.
- 1Y-06-01 Turning gear required to be operated in manual.
- 06-01 Local flow and remote alarm indication will be lost for CCW to the seal water heat exchangers for P-10A/B (HR pumps), P-14A/B (Containment Spray pumps), and P-15A/B (Hi Head SI pumps).
- 1Y-06-01 Heating boiler day tank loss of alarm and filling capability, loss of ability to fill the Emergency Fuel Oil Tank.
- 1Y-06-01 Loss of alarm for G01 and G02 day tank level alarms (alarm only, auto fill available).
- 1Y-06-01 Steam generator sample isolation will be required.
- 1Y-06-03 Steam Generator Blowdown is required to be secured due to control valves going shut.
- 1Y-06-03 Solenoid from service water to the bearings on 1P-29 (Steam Driven Aux Feed pump) will fail open.
- 1Y-06-03 Both P-116 pump need to be secured due to loss of power to the hand controllers for the valves associated with the P-116s (Boric Acid Storage Tank recirc pumps).
- 1Y-06-03 The alarm function for condenser vacuum will be secured.

This safety evaluation is being written to cover both the modification and installation.

In Summary, replacement of these 1Y05 and 1Y06 breakers does not involve an unreviewed safety question.

POINT BEACH NUCLEAR PLANT
MSS SERIAL REVIEW

DOCUMENT NUMBER & NAME 50.59 For Breaker Replacements of in 14-05, -01, -05, -03, -11
and 14-06, -01, -03, -05, -11
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NOTES:

FILE NO. _____
DATE 02-27-97

- The provisions of 10 CFR 50.59 apply to all changes and must be evaluated and documented in accordance with NP 10.3.1, "Authorization of Changes, Tests, and Experiments." Attach PBF-1515 if review is required.
- Technical Specification 15.6.8 applies for procedure changes. An MSS Quorum (four different disciplines, shall review the proposed changes prior to approval by the manager.

REVIEW REQUIRED

DISCIPLINES		Init	Date
*AJ Cayia	PBNP Mgr		
OPS			
*AJ Cayia			
*TG Staskal			
*CM Gray	f Cervino	TC	2/27/97
MTN			
*WB Fromm	JG Schweitzer		
*JA Palmer			
*GR Sherwood			
WJ Herrman		MWH	2/27/97
HP			
TC Guay	DF Johnson		
MD Moseman	MF Baumann		
EJ Epstein			
CHEM			
*DD Schoon	KR Rathgaber		
*FP Hennessy	AJ Cayia		
LIC			
*TC Guay	MF Baumann		
DD Schoon	DF Johnson	DFJ	2/27/97
JF Becka	RK Hanneman		
AJ Cayia			
RD Seizert			

DISCIPLINES		Init	Date
ENG			
*JG Schweitzer	*PB Tindall		
WB Fromm	PJ Katers		
*WJ Herrman	JF McNamara		
TG Staskal	JA Palmer		
*SA Patulski	KR Rathgaber		
WA Hennig	AL Reimer		
MF Baumann	GR Sherwood		
JF Becka	BO Sasman		
AJ Cayia	PW Huffman		
RK Hanneman	TJ. JESSKI	TJJ	2/27/97
FP Hennessy			
WJ Hennessy			
TR Branam			
DD Schoon			
TRN			
*RD Seizert	WJ Hennessy		
*MB Koudeika		mbk	02/27/97
BJ Vander Velde	FA Flentje		
MSS No	97-04		02/27/97

Approved: J.B. Schweitzer
PBNP Manager

Date: 2/27/97

COMMENTS	INITIALS/DATE	RESOLUTION	INITIALS/DATE

RETURN TO RECORDS MANAGEMENT UPON COMPLETION