TER 13555
Rev 0

10 CFR 50.59 EVALUATION

RTL# 01.050VC

Document ID: 50.59 - 01 - 003 Revision No. 0

Identification of Activity: TER 13555 Rev. 0 BVPS Unit 2

Description of Activity: Update Unit 2 Fire Protection Safe Shutdown Report to Document Spurious Signal Analysis for Ventilation System Components

Note: Personnel who initiate a change to the Facility or Procedures as described in the UFSAR shall also initiate a UFSAR change per NPDAP 7.3. Include the UFSAR Change Notice and marked-up UFSAR pages as an attachment to the 10 CFR 50.59 Evaluation.

H. J. Kahl Preparer (Print Name)	HJKahl Preparer's Signature	1/15/01 Date
J. F. Ankney Independent Reviewer (Print Name)	John F. Ankney Independent Reviewer's Signature	1-15-01 Date
	Section Manager Concurrence /KEH	1/16/01 Date
BV-OSC-04-01 OSC Meeting or Poll Number	OSC Chairman Concurrence (comments addressed)	1/25/01 Date
	Plant General Manager Approval	1/30/01 Date
	10 CFR 50.59 Program Manager	1-31-2001 Date

Harold Kahl 00:00

RKH 1/31

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SUMMARY

1. Summary of Activity. Provide a brief description of the Activity in accordance with 10 CFR 50.59(b)(2).

The BVPS-2 Fire Protection Safe Shutdown Report, Sections 3.2, 3.11, 3.12, 3.13, 3.25, 3.32, 3.33, and 3.34, will be revised to include spurious signal analysis for safe shutdown related ventilation systems. Due to interlocks between opposite trains of ventilation systems, fire induced spurious signals in one train could result in tripping the opposite train fans. The spurious signals will be addressed by manual actions as follows:

- Emergency Switchgear Ventilation 2HVZ*FN261A and B

For a fire in fire areas ASP, CV1, CV2, and SB3 the breaker will be tripped for the spuriously operating fans. For a fire in emergency switchgear room SB1 or SB2, the emergency bus will be deenergized, if required, to defeat spurious actuation.

- Control Room ventilation 2HVC*ACU201A and B

For a fire in fire areas CV2, CV3, or PA3, the breakers will be tripped for the spuriously operating fan. For a fire in emergency switchgear room SB1 or SB2, the breaker will be tripped or the bus will be deenergized, as above, to defeat spurious actuation.

- Cable Vault and Rod Control Area ventilation 2HVR*ACU208A and B

For a fire in fire areas CV1 or CV2, heat loads will be reduced in event of a loss of ventilation. For a fire in emergency switchgear room SB1 or SB2, the breaker will be tripped or the bus will be deenergized, as above, to defeat spurious actuation.

Changes will be incorporated in OM Chapter 56B to accomplish these actions similar to the proposed changes listed in the attachment to this safety evaluation.

2. Summary of the 10 CFR 50.59 Evaluation Conclusions. Provide a brief description of the basis for concluding that an Unreviewed Safety Question is or is not involved in accordance with 10 CFR 50.59(b)(2).

An unreviewed safety question is not involved. The proposed changes do not affect the UFSAR. Appendix 9.5A of the UFSAR describes general safe shutdown methodology but does not contain the level of detail. The ability to safely shut down the plant after a fire is not adversely affected. Manual actions for reducing heat loads in the Cable Vault and Rod Control Area on loss of all ventilation with fire in CV1 or CV2 are the same as the manual actions already specified for fires in fire areas CB1, CB2, CB3, CT1, PA4, PT1, and SB3. Manual actions for the emergency switchgear ventilation with a fire in SB1 or SB2 is the same as the manual actions already specified in OM chapter 56B for spurious actuation of an auxiliary feed pump. Manual actions are not time-critical and will not significantly add to the burden on the operator to complete the required actions.

3. Identify specific UFSAR parts (i.e., pages, tables and figure numbers) modified or potentially modified by this Facility Change, Procedure Change, Test or Experiment. Attach the marked-up UFSAR pages to be changed.

Section 9.5 and Appendix 9.5A of the UFSAR were reviewed. The UFSAR will not be affected. This change will affect the Fire Protection Safe Shutdown Report Sections 3.2, 3.11, 3.12, 3.13, 3.25, 3.32, 3.33, and 3.34.

4. Provide references to the location of information used for the evaluation.

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FPSSR Section 2.5.6, Control Room HVAC System Summary
FPSSR Section 2.5.8, Cable Vault and Rod Control Area HVAC System Summary
FPSSR Section 2.5.13, Emergency Switchgear and Battery Room Ventilation System Summary
12241-US(B)-210, Loss of Ventilation Study for Several Buildings/Areas Outside Containment
12241-US(B)-211, Loss of Ventilation Study for Several Areas of Control Building
10080-US(B)-230, Emergency Switchgear Heatup Following Loss of Ventilation
12241-B-215, Heat Gains, Heat Sinks, and Beginning Temperature for Emergency Switchgear, CV&RCA, Diesel Gen. Bldg., Safeguards Bldg., and Aux. Bldg for Loss of Ventilation Analysis
UFSAR Section 1.2.11 Cooling Water and Other Auxiliary Systems
UFSAR Table 7.3-4, FMEAs
UFSAR Section 9.4.1, Control Room Area Ventilation System
UFSAR Section 9.4.10.3, Emergency Switchgear Room Ventilation System
UFSAR Section 9.4.12, Cable Vault and Rod Control Area Ventilation System
UFSAR Section 6.4, Habitability Systems.
UFSAR Section 9.5A.2 Differences from Branch Technical Position CMEB 9.5-1 (C.5.f(3) Control Room Ventilation 9.5A-152)
2OM56B.3.B.2 Attachment 1, Fire Area SB-1 Manual Actions
2OM56B.3.B.2 Attachment 3, Fire Area SB-2 Manual Actions
ES-M-013, Rev. Environmental Conditions for Class 1E Equipment Requirements

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PART 1: EFFECT ON DESIGN BASIS (UFSAR) ACCIDENTS

1.A Supporting Information

1.A.1 Identify the safety Structures, Systems or Components (SSC) and/or SSCs important to safety affected by the Activity.

The following ventilation equipment is potentially affected by the spurious signals identified:
2HVC-ACU201A and B, Control Room Air Conditioning Unit
2HVR-ACU208A and B, Rod Control and Cable Vault Air Conditioner
2HVZ-FN261A and B, Emergency Switchgear Supply Fan

1.A.2 Identify the SSC operating and design parameters affected by the Activity.

The proposed changes will not affect any design parameters. The manual actions to be specified for incorporation in 2OM56B will restore the equipment to operation by defeating the spurious signal, or by providing diverse means of accomplishing the safe shutdown function. In accordance with ES-M-013, 120F is the Anticipated Operational Occurrence temperature for the areas involved. The analyses (Control Room 12241-US(B)-211-2; Cable Vault 12241-US(B)-210-1; Emergency Switchgear 10080-US(B)-230-0) indicate that this temperature will not be reached for at least 1 hour following loss of ventilation for any of the identified areas.

1.A.3 Identify the design basis accidents in the Updated Final Safety Analysis Report (UFSAR) to be reviewed for potential impact by the Activity.

There are no design basis accidents that will be affected by the activity because safe shutdown following fire damage does not impact the accidents described in UFSAR Chapter 15.

1.A.4 List the radiological consequences of the accident(s) identified in 1.A.3 as reported in the UFSAR.

No accidents were identified in 1.A.3

1.A.5 Identify the failure modes of important to safety SSC that have previously been evaluated in the UFSAR and that are affected by the Activity.

Failure modes of the ventilation systems were evaluated in a special report referenced in the UFSAR, Table 7.3-4 titled Failure Modes and Effects Analysis, which does not address multiple circuit failures such as those which could be cause by a fire. Effects of a fire on safe shutdown capability are addressed in the Fire Protection Safe Shutdown Report. The FPSSR identified loss of the Control Room, Emergency Switchgear, and Cable Vault ventilation systems due to fires in various plant areas. This change to the FPSSR identifies ventilation equipment losses in additional fire areas due to spurious signals.

1.A.6 Identify the design basis accidents, if any, for which failure modes associated with the Activity can be an initiating event.

The failure modes will not initiate any design basis accidents because the failures are not related to any of the accidents in Chapter 15 of the UFSAR.

1.B. Evaluation Questions

1.B.1 Discuss the effect of the Activity on the probability of occurrence of the design basis accidents identified in 1.A.3. Will the Activity meet the design, material, and construction standards applicable to the SSC being modified? Will the Activity affect overall system performance in a manner which could increase the likelihood of occurrence of an accident?

No design basis accidents were identified in 1.A.3.

1.B.2 Based on 1.B.1, may the Activity increase the probability of occurrence of an accident previously evaluated in the UFSAR?

YES ☐ NO ☑

1.B.3 Discuss how the parameters and systems affected by the Activity affect the assumptions and radiological consequences of the accidents identified in 1.A.4.

No radiological consequences were identified in 1.A.4.

1.B.4 Based on 1.B.3, may the Activity increase the consequences of an accident previously evaluated in the UFSAR?

YES ☐ NO ☑

1.B.5 Discuss the effects of the Activity, and/or the failure modes associated with the Activity, on the probability of malfunction of the identified safety systems and/or systems important to safety. Will the Activity meet the original design specifications for material and construction practices? Will the Activity degrade SSC reliability?

The proposed changes to the Fire Protection Safe Shutdown Report will not affect the probability of loss of the identified ventilation systems. There are no plant modifications being made. The FPSSR will be revised to identify existing failure modes. The procedure actions are similar to existing procedures in OM Chapter 56B for fires in other fire areas, or are the same as the actions used to address other spurious signals in the fire area.

1.B.6 Based on 1.B.5, may the Activity increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the UFSAR?

YES ☐ NO ☑

1.B.7 Discuss the effect of the Activity on the performance of equipment in the identified safety systems and/or systems important to safety and the consequences of malfunction of that equipment. Will the Activity cause equipment failures or malfunctions which would result in increased radiological consequences?

The activity will not cause equipment failures or malfunctions which would result in increased radiological consequences because operating procedures will be implemented in OM Chapter 56B to ensure adequate cooling of safe shutdown related equipment.

1.B.8 Based on 1.B.7, may the Activity increase the consequences of a malfunction of equipment important to safety previously evaluated in the UFSAR?

YES ☐ NO ☑

If the answer to any of the above questions is YES,
then the Activity represents an UNREVIEWED SAFETY QUESTION.

PART 2: POTENTIAL FOR CREATION OF NEW TYPE OF UNANALYZED EVENT

2.A Supporting Information

2.A.1 Identify the types of accidents that the Activity could create.

There are no new types of accidents created. The same type of loss of safety related ventilation systems, regardless of the initiating mode of failure, was previously evaluated in other fire areas.

2.A.2 Identify new failure modes of equipment important to safety associated with the Activity.

There are no new failure modes created by this revision to the FPSSR. Loss of ventilation systems was previously evaluated in other fire areas.

2.B Evaluation Questions

2.B.1 Discuss the impact of the Activity and/or failure modes associated with the Activity to determine if the impact has modified the plant response to the point where it can be considered a new type of accident.

The plant response will not be affected because temperature in safety related areas would be adequately controlled via the procedure changes in OM Chapter 56B.

2.B.2 Based on 2.B.1, may the Activity create the possibility of an accident of a different type than any previously evaluated in the UFSAR?

YES ☐ NO ☑

2.B.3 Discuss if the failure modes of equipment important to safety associated with the Activity represent a new unanalyzed type of equipment malfunction.

Loss of ventilation equipment is not a new type of malfunction for the reasons stated in 2.A.1 and 2.A.2.

2.B.4 Based upon 2.B.3, may the Activity create the possibility of a different type of malfunction of equipment important to safety than any previously evaluated in the UFSAR?

YES ☐ NO ☑

If the answer to any of the above questions is YES,
then the Activity represents an UNREVIEWED SAFETY QUESTION.

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PART 3: IMPACT ON THE MARGIN OF SAFETY

3.A Supporting Information

3.A.1 Identify the acceptance limits that form the licensing basis for the Technical Specifications (i.e., the accident analysis and other design basis) that could be affected by the Activity.

There are no explicit technical specification operability requirements for the safety related HVAC systems. These systems support the operation of other safety systems by maintaining the temperature within design limits.

3.B Evaluation Questions

3.B.1 Discuss the impact of the Activity on the acceptance limits and margin to safety, which form the basis for the Technical Specifications.

There are no explicit technical specification operability requirements for the safety related HVAC systems. The activity will not impact the margin to safety because the temperature will be maintained within design limits using appropriate manual actions in OM Chapter 56B.

3.B.2 Based on 3.B.1, does the Activity reduce the margin of safety as defined in the basis for any Technical Specification?

YES ☐ NO ☑

If the answer to any of the above questions is YES,
then the Activity represents an UNREVIEWED SAFETY QUESTION.

PART 4: 10 CFR 50.59 EVALUATION CONCLUSION

Based on the evaluation in Parts 1, 2 and 3, the Activity does:

x NOT involve an Unreviewed Safety Question.

____ Involve an Unreviewed Safety Question. Contact the Licensing Section before presenting the evaluation to the Onsite Safety Committee.

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PART 5: ENVIRONMENTAL EVALUATION
(Applicable to BVPS Unit 2)

5.A Supporting Information

5.A.1 Identify any significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement - Operating License Stage, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board.

There is no increase in environmental impact because there are no effluent systems affected.

5.A.2 Identify any significant change in effluents or power level.

The changes in the fire protection safe shutdown analysis do not authorize any changes to effluents or power levels.

5.A.3 Identify any matters, not previously reviewed and evaluated in the Environmental Protection Plan, Final Environmental Statement - Operating License Stage or National Pollutant Discharge Elimination System (NPDES) permit, which may have a significant adverse environmental impact.

The proposed changes to FPSSR and operating procedures are not related to any discharges to the environment.

5.B Evaluation Question

Based on the evaluation in Part 5.A, the Activity does:

x NOT involve an Unreviewed Environmental Question.

_____ Involve an Unreviewed Environmental Question. Contact the Licensing Section before presenting the evaluation to the Onsite Safety Committee.