UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

July 15, 2011

Mr. L. Mike Stinson
Vice President - Farley
Southern Nuclear Operating Company, Inc.
7388 North State Highway 95
Columbia, AL 36319

SUBJECT: PUBLIC MEETING SUMMARY - JOSEPH M. FARLEY NUCLEAR PLANT - DOCKET NOS. 50-348 AND 50-364

Dear Mr. Stinson:

This refers to the Regulatory Conference conducted on July 12, 2011, in Atlanta, GA. The purpose of the Regulatory Conference was to provide opportunities to discuss the safety significance of the preliminary White finding associated with one Apparent Violation that was documented in NRC Inspection Report 05000348/2011012 and 364/2011012 (ML111590912). The findings dealt with the failure to maintain the configuration of the 1A reactor coolant pump (RCP) oil lift pump system in accordance with plant design and drawings. This resulted in an electrical short on November 10, 2010 that caused a fire on the Unit 1 main control room (MCR) 1A RCP board handswitch. This conference also addressed whether enforcement action is warranted for the associated Apparent Violation.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room (PDR) or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this meeting, please contact me at (404) 997-4521.

Sincerely,

/RA/

Scott M. Shaeffer, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos.: 50-348, 50-364
License Nos.: NPF-2, NPF-8

Enclosures:
1. List of Attendees
2. NRC Agenda
3. SNC Powerpoint Presentation

cc w/encls: (See page 2)

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ADAMS: X☐ Yes ACCESSION NUMBER:_____ML111960460_____ X ☐ SUNSI REVIEW COMPLETE

OFFICE	RII:DRP	RII:DRP					
SIGNATURE	SMS /RA for/	SMS /RA/					
NAME	SRose	SShaeffer					
DATE	07/15/2011	07/15/2011					
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DRPII\RPB2\FARLEY\MEETINGS\MEETING SUMMARY 071211.DOCX

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Environmental Protection Division
Georgia Department of Natural Resources
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Letter to L. Mike Stinson from Scott M. Shaeffer dated July 15, 2011

SUBJECT: PUBLIC MEETING SUMMARY - JOSEPH M. FARLEY NUCLEAR PLANT - DOCKET NOS. 50-348 AND 50-364

Distribution w/encls:
RidsNrrPMFarley Resource
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OE Mail
RIDSNRRDIRS
PUBLIC

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

FARLEY REGULATORY CONFERENCE
Atlanta, GA
July 12, 2011

Name (Print)	Title and Organization
J. Munday	Division Director NRC RII/DRS
R. Nease	Branch Chief NRC RII/DRS/EB2
G. McCoy	Branch Chief NRC RII/DRP/RPB5
L. Suggs	Inspector NRC RII/DRS/EB2
R. Fanner	Inspector NRC RII/DRS/EB2
G. Wiseman	Senior Inspector NRC RII/DRS/EB2
D. Chung	NRC NRR/DRA/PRA Operational Support
E. Crowe	Senior Resident Farley NRC RII/DRP
W. Rogers	SRA NRC RII/DRP/RPB7
W. Jones	Deputy Division Director NRC RII/DRP
R. Croteau	Division Director NRC RII/DRP
L. Wert	Deputy Regional Administrator NRC RII
S. Sparks	Senior Enforcement Specialist NRC RII
S. Shaeffer	Branch Chief NRC RII/DRP/RPB2
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T. Lighty	Project Engineer NRC RII/DRP/RPB2

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245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

FARLEY REGULATORY CONFERENCE
Atlanta, GA
July 12, 2011
(Via Teleconference)

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M. Ashley	NRC HQ/NRR
S. Meng Wong	NRC HQ/DRA
A. Klein	NRC HQ/DRA/AFPB
S. Lee	NRC HQ/DRA
J. Hyslop	NRC HQ/DRA/FRB
N. Coleman	NRC HQ/OE
J. Circle	NRC HQ/NRR/DRA/APOB
R. Gallucci	NRC HQ/NRR/DRA/APLA
B. Martin	NRC HQ/NRR/DORL
D. Harrison	NRC HQ/DRA

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FARLEY REGULATORY CONFERENCE
Atlanta, GA
July 12, 2011

Name (Print)	Title and Organization
Patricia M Long	FP Supervisor / SNC
Tracy Honeycutt	Reg. Response Supv. / SNC
AMOT CATER	Public Affairs / SNC
MARTHA T CLANTON	Public Affairs / SNC
Kay Martin	Eng Program Mgr / SNC
Michael McCurdle	Sr Engineer / SNC
Stephanie Clark	Engineer / SNC
Francisco Joglar	Engineer / SAIC
Bryan Griner	Engineering Dir / SNC
Ken McElroy	Risk Informed PM / SNC
JOHN LATTNER	PRINCIPAL FIRE PROT. ENG. / SNC
Mark Ajluni	SNC Licensing Director
Art Domby	Southern Nuclear (Troutman)
Thomas Saporito	via telephone (Public)

U.S.NRC

United States Nuclear Regulatory Commission

Protecting People and the Environment

Enclosure 2

REGULATORY CONFERENCE AGENDA
SOUTHERN NUCLEAR OPERATING COMPANY
JULY 12, 2011
NRC REGION II, ATLANTA, GEORGIA

I. OPENING REMARKS AND INTRODUCTION

II. NRC REGULATORY AND ENFORCEMENT POLICY

III. STATEMENT OF ISSUE AND APPARENT VIOLATION

IV. SOUTHERN NUCLEAR OPERATING COMPANY

V. TRANSITION TO CLOSED SESSION (If Required)
- a. PUBLIC QUESTIONS
- b. NRC REMARKS/BREAK
- c. SOUTHERN NUCLEAR OPERATING COMPANY

VI. BREAK/NRC CAUCUS

VII. NRC FOLLOW UP QUESTIONS

VIII. CLOSING REMARKS

IX. PUBLIC QUESTIONS (If Not Previously Performed)

Farley Nuclear Plant
NRC Regulatory Conference
July 12, 2011

Mark J Ajluni, PE
Nuclear Licensing Director

John D Lattner, PE
Principal Engineer – Fire Protection

Ken McElroy
RIE Program Manager

Agenda

- Introductions
- Objectives
- Presentation
- Wrap-Up and Conclusion

Objectives

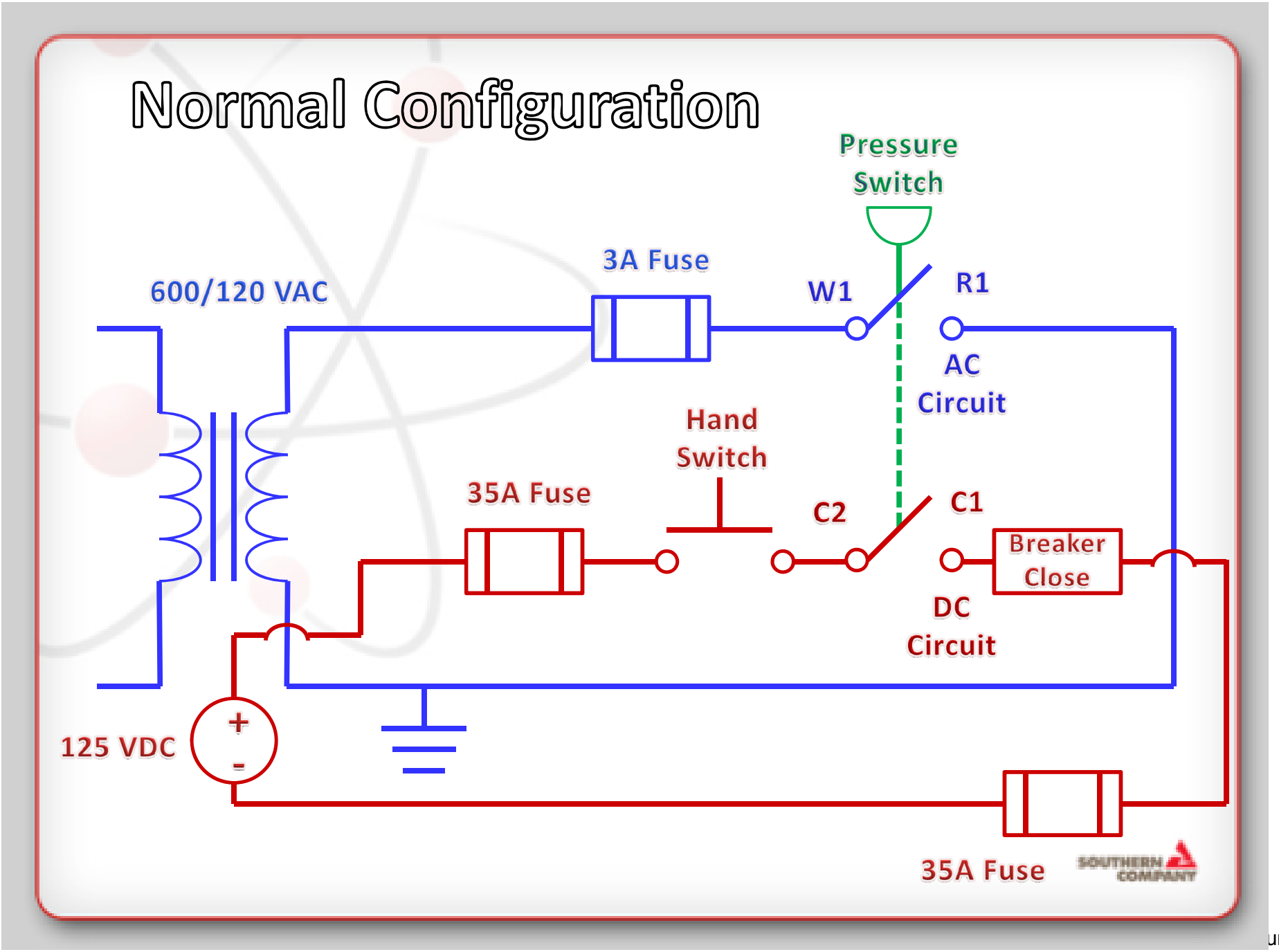
1. To provide new information about the event

2. To prove the handswitch fire that occurred on Nov. 10, 2010, in the Unit 1 control room was a *non-challenging* fire per the guidance of NUREG/CR 6850

3. To demonstrate that the event is *not risk significant* and should be characterized as green

The Event

- Calibration of 1A RCP oil lift system
- Broken conduit found
- Repairs made under PM processes versus CM
- Operators later attempted start of the 1A RCP and detected burning inside the handswitch
- Operator responded by opening panel and blowing on the switch box enclosure
- At the same time the circuit opened and the burning stopped


Normal Configuration
Pressure Switch
3A Fuse
600/120 VAC
W1
R1
AC Circuit
Hand Switch
35A Fuse
C2
C1
Breaker Close
DC Circuit
125 VDC
+
-
35A Fuse
SOUTHERN COMPANY

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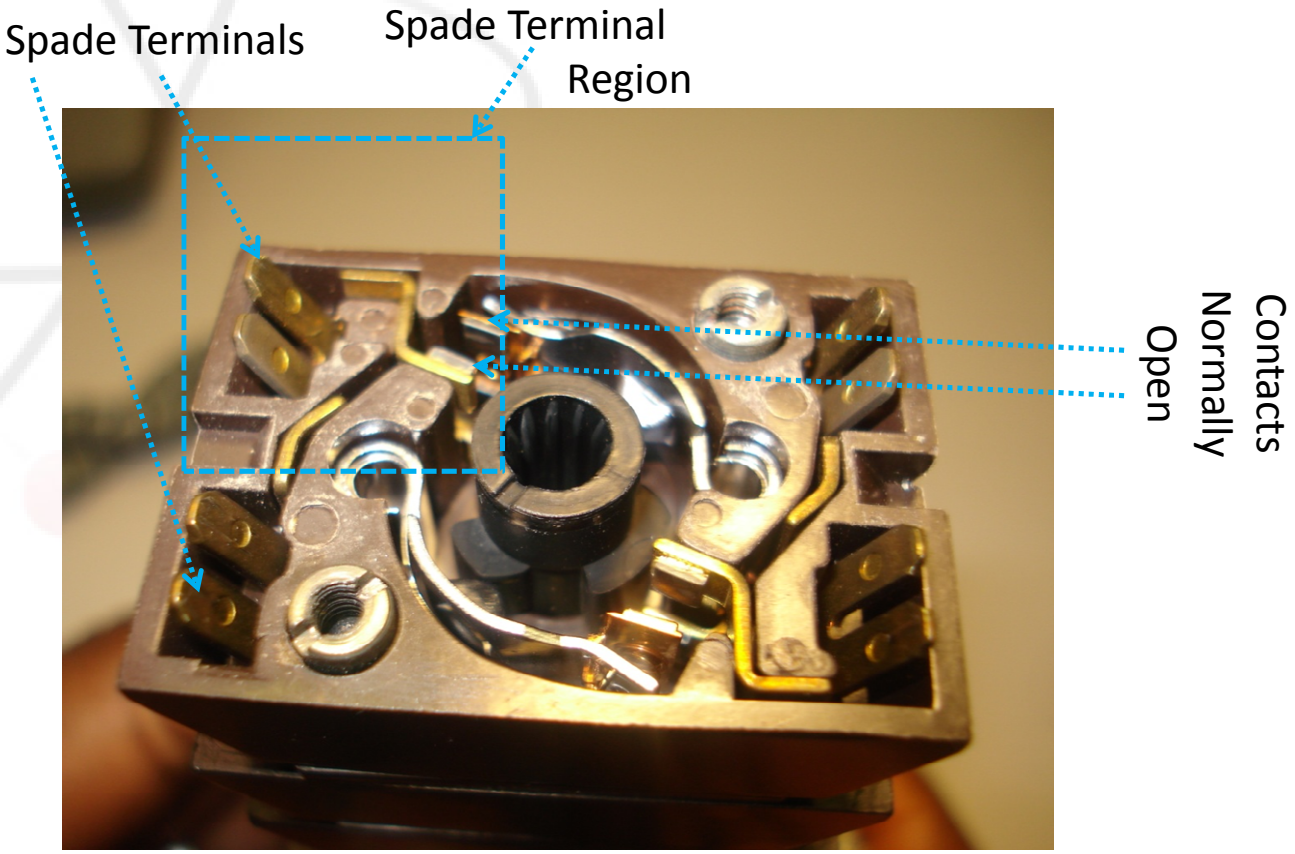
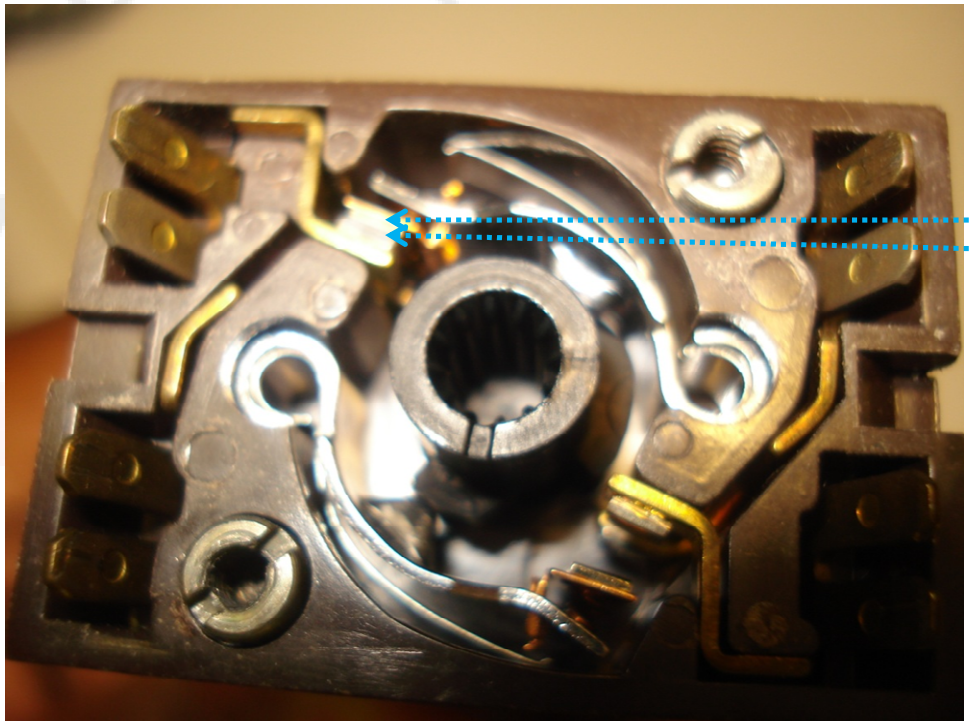
Handswitch Internals



Handswitch in Closed Position



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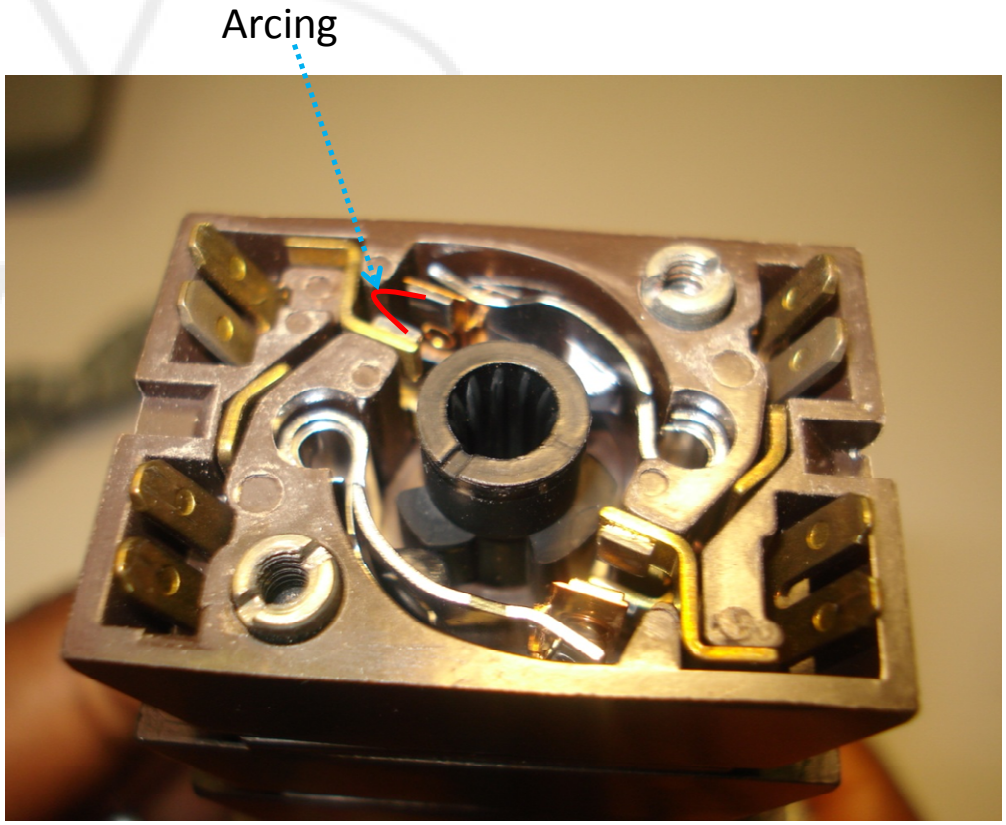
Handswitch Spring Returns to Open



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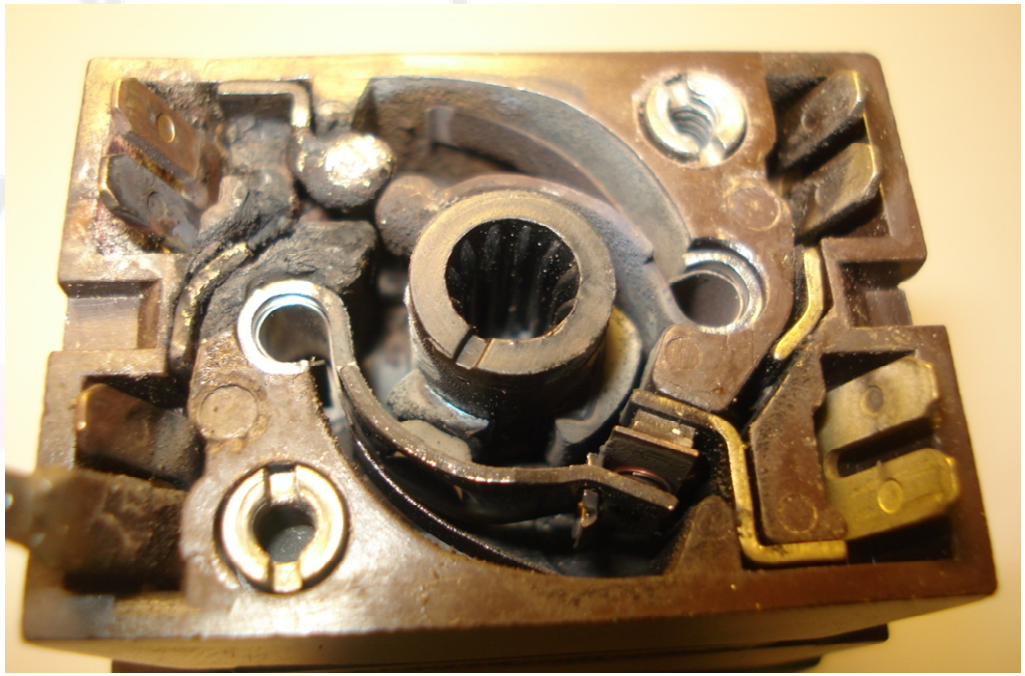
Handswitch Damage



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Testing Results

Because we are dealing with a specific wiring arrangement and switch all seven SNC tests of handswitch fault indicate the same location for damage and the repeatable nature of failure for this particular fault.

Handswitch Construction

- Fire resistive construction of switch block
- Does not melt or drip plastic
- Fire resistive construction of switch housing
- Objective of testing was to confirm how the switch responds to shorted conditions

Main Control Board Handswitch

ure 3

Main Control Board Handswitch

SOUTHERN COMPANY

ure 3

Main Control Board Handswitch

Operator Intervention

- The operator action had no impact on putting out the fire
  - Switch is well placed in fire retardant enclosure making direct air flow to the point of combustion impossible
  - The Condition Report assumes what the operator initially believed at the time, that he blew out the fire
  - Switch will self-extinguish when current path becomes interrupted
  - Operator action was inconsequential, testing shows the fire will self-extinguish anyway

Main Control Board

ure 3

No Potential for Fire Spread

- Handswitch fire self-extinguishes
  - Confirmed by testing
- Handswitch fire not of sufficient duration or intensity to ignite secondary combustibles
  - Test thermocouples
  - CHRISTIFIRE test results
- Fire resistive properties of cables and handswitch materials
- No hot gas layer formed within panel
- Conclusion: No potential for fire spread

NUREG/CR-6850 Appendix C Objective Classification Criteria

If any one of the following exist, the event is challenging

NUREG/CR-6850 Objective Criteria	FNP Event
A hose stream, multiple portable fire extinguishers, and/or a fixed fire suppression system (either manually or automatically actuated) were used to suppress the fire	No automatic or manual suppression used
One or more components outside the boundaries of the fire ignition source were affected	No evidence of any collateral damage outside of the fire ignition source
Combustible materials outside the boundaries of the fire ignition source were ignited	No ignition of secondary combustibles

NUREG/CR-6850 Appendix C Objective Classification Criteria

If any two of the following exist, the event is challenging

NUREG/CR-6850 Objective Criteria	FNP Event
Actuation of an automatic detection system	Event did not produce sufficient smoke to actuate the main control room detection system. An ionization smoke detector is located on the ceiling directly behind Section C of the MCB
A plant trip was experienced	Event did not cause a plant trip. The unit was in cold shutdown.
A reported loss of greater than $5,000	Physical damage limited to the handswitch (< $1,000)
A burning duration or suppression time of 10 minutes or longer	Burning duration was less than two minutes

SOUTHERN COMPANY

ure 3

NUREG/CR-6850 Appendix C Subjective Classification Criteria

If any of the following exist, the event is Challenging

NUREG/CR-6850 Subjective Criteria	FNP Event
It is apparent that active intervention was needed to prevent potential spread	Operator blowing on the switch enclosure was insignificant intervention. Test data demonstrates the handswitch fire self-extinguishes
There are indications that heat was generated of sufficient intensity and duration to affect components outside the fire ignition source	No evidence of heat damage to any components outside of the fire ignition source
There are indications that flames or heat was generated of sufficient intensity and duration to cause the ignition of secondary combustibles outside the fire ignition source	No ignition of secondary combustibles
Substantial smoke was generated	Insignificant amount of smoke

NUREG/CR-6850 Appendix C Subjective Classification Criteria

If any of the following exist, the event is Challenging

NUREG/CR-6850 Subjective Criteria	FNP Event
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There are indications that heat was generated of sufficient intensity and duration to affect components outside the fire ignition source	No evidence of heat damage to any components outside of the fire ignition source
There are indications that flames or heat was generated of sufficient intensity and duration to cause the ignition of secondary combustibles outside the fire ignition source	No ignition of secondary combustibles
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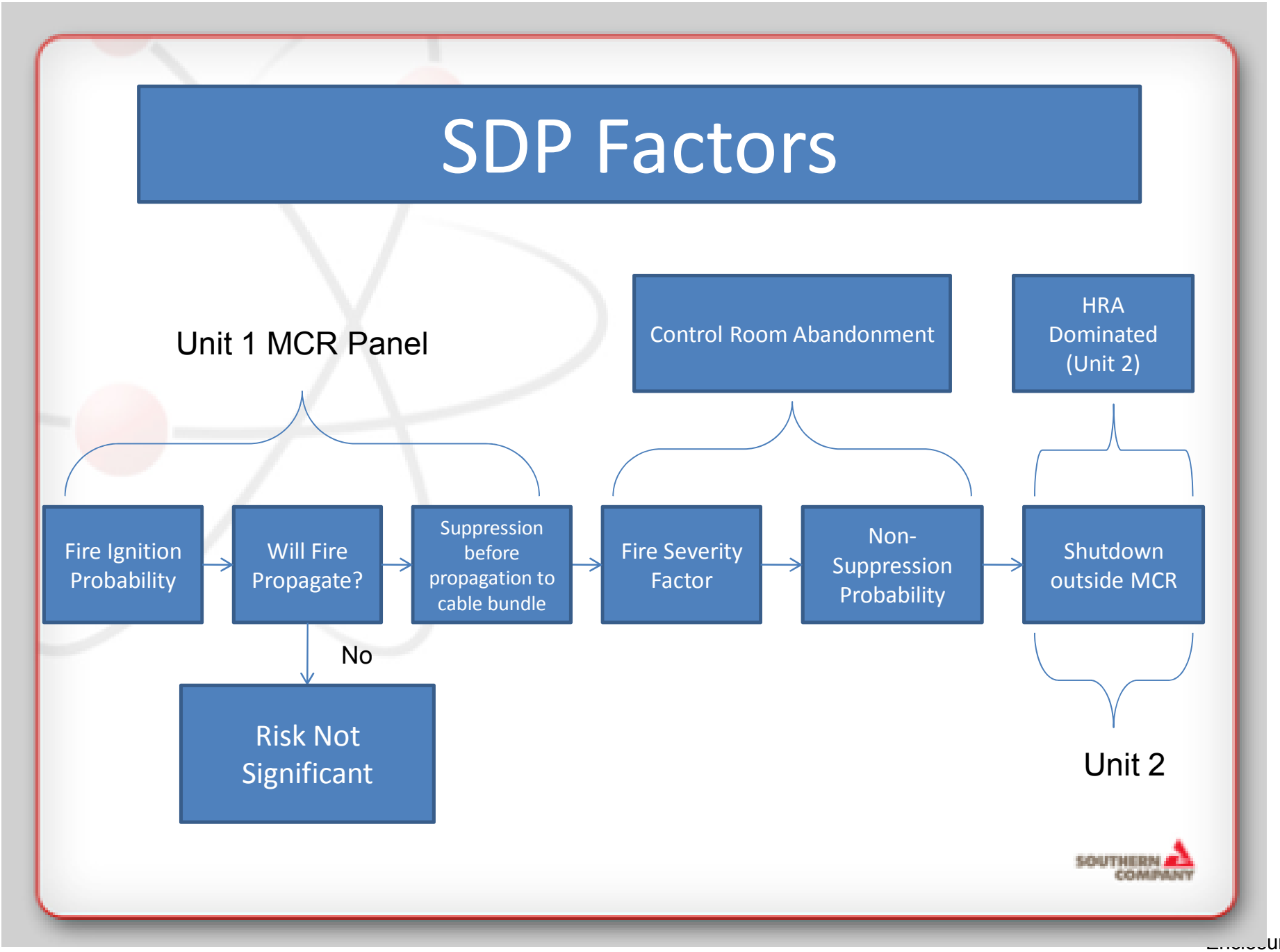
Non-Challenging Control Room Fires From Fire Events Database Involving Intervention

Fire Incident No	Description	Type of Intervention
374	SDV high level RPS relay burned	Control room personnel extinguished the burning relay
425	A relay burned due to its “old age”	Portable CO_2 extinguisher used
815	A relay burned up in the primary containment isolation panel	Portable CO_2 extinguisher used
2224	Defective insulation on windings led to fault within current protection relay	Portable fire extinguisher used
2266	Small fire found in control panel transformer	Operator blew out flame

Conclusion: Non-Challenging

- None of the objective or subjective criteria was met
- Event is non-challenging

SNC Risk Significance Determination


SDP Factors
Unit 1 MCR Panel
Control Room Abandonment
HRA Dominated (Unit 2)
Fire Ignition Probability
Will Fire Propagate?
Suppression before propagation to cable bundle
Fire Severity Factor
Non-Suppression Probability
Shutdown outside MCR
No
Risk Not Significant
Unit 2
SOUTHERN COMPANY

Phase III Summary

	Fire Ignition Probability	Propagation Probability	Suppress before propagation to cable bundle	MCR Abandonment Probability	Shutdown outside MCR	CCDP
NRC	1.0	0.5	1.0**	1.1E-3 (upper) 5.6E-4 (lower)	9.9E-3	5.5E-6 (white) 2.8E-6 (white)
SNC	1.0	0.5*	1.0** (upper) 0.01 (realistic)	6.3E-5 6.4E-4	3.1E-3	1.0E-7 (green) 1.0E-8 (green)

- * SNC Position – fire not challenging
- **Considered in MCR abandonment probability

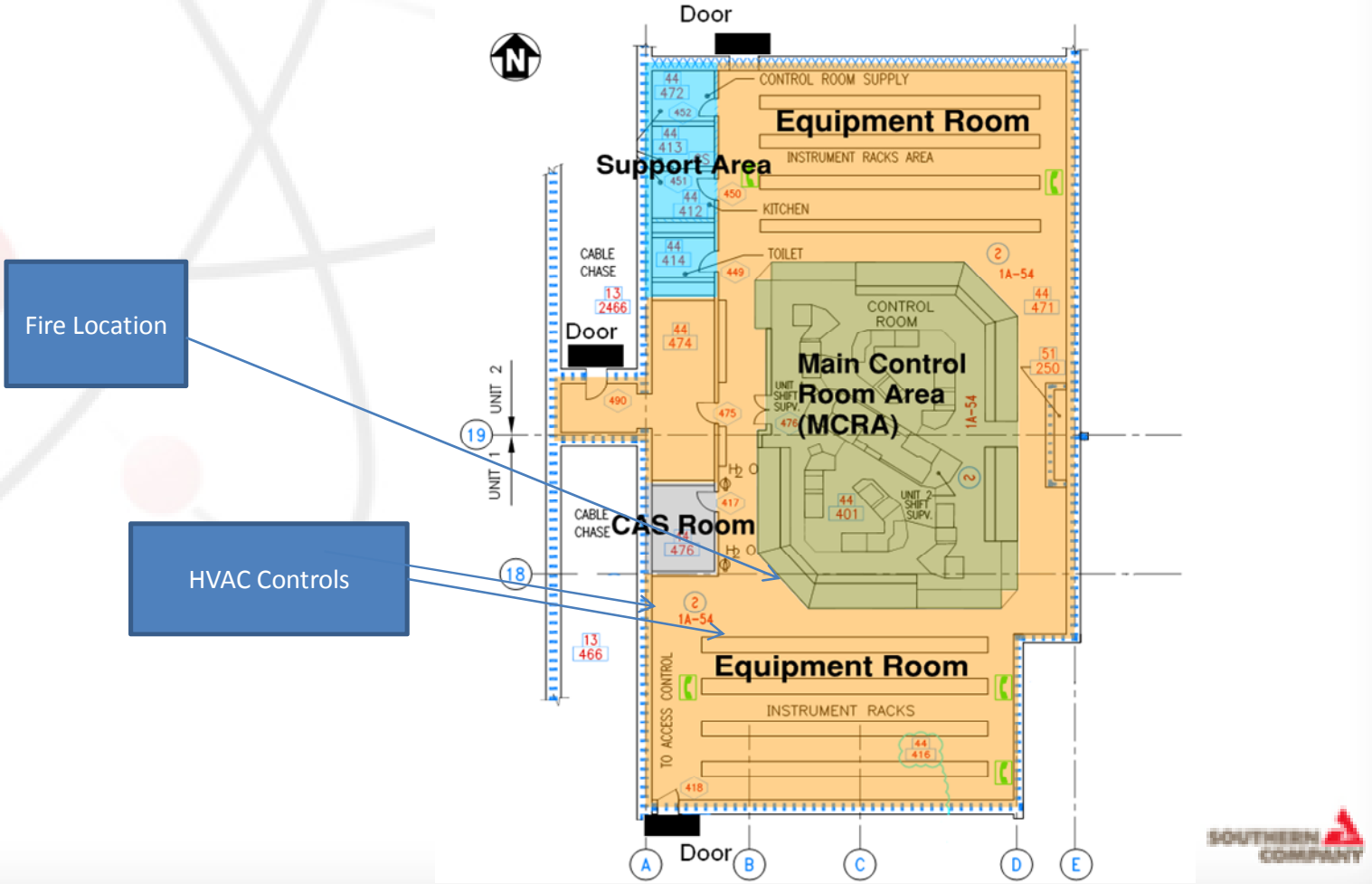
MCR Abandonment - HVAC

- HVAC Operation
  - HVAC allows Main Control Room (MCR) to remain manned for larger fires
  - Larger fires are less likely to occur
  - Risk of Abandonment reduced by a factor of 20
- Both NRC and SNC used NUREG/CR-6850 methods

MCR Abandonment (cont.)

- NRC assumed HVAC inoperable
- SNC determined HVAC was operating normally and would continue to operate
  - HVAC controls/circuitry physically separated from fire location
  - Operators and Fire Brigade would not trip HVAC

Farley Common MCR



ure 3

Shutdown from Outside MCR

NRC Value	SNC Value	Comments
9.9E-3	3.1E-3	•Dominated by loss of aux feedwater due to human error •Equipment failure of AFW negligible •Difference is due to modeling of human error

SDP Summary

- Even assuming a “challenging” fire and an event probability of 1.0, the CCDP is green
  - HVAC was a operating normally making the likelihood of control room evacuation less
  - SNC performed a more realistic HRA reducing the calculated risk

Corrective Actions

ure 3

Root Cause of the Event

- No written work package generated for the replacement of the flex conduit. We stepped out of process mixing CM with PM
  - No lift sheet
  - No pre-job brief
- Management has not been successful in getting Maintenance to internalize Human Performance tool usage 100% of the time.
  - No discussion of human performance tools when problem identified
  - Skill-of-the-craft is accepted behavior

Corrective Actions

- Revised fleet procedures to define allowable work scope for minor maintenance, tool pouch work, and CR initiation.
- Maintenance personnel were trained using dynamic training methods.
- Implemented leadership action plan for Maintenance Superintendents. Accomplished with the assistance of leadership expert.

Conclusion and Wrap-Up

- The event is non-challenging as it does not meet the NUREG / CR 6850 criteria for challenging
- Tests revealed that the handswitch consistently fails at the same location, resulting in a self-extinguishing condition
- Target cables will not catch fire because heat rates are low.
- Modeling control room HVAC results in “green ” risk.
- The event is not risk significant
- The event should be characterized as green