FORM APF-05D-001-02, REV. 11

CALCULATION CHANGE NOTICE

CCN NO. XX-E-013 - ~~003~~ 004 - ~~CN007~~ CN003 10/14/15

Base Calc No. | Rev No. | Sequence No.

CALCULATION TITLE - Enter this item in *CALCULATION TITLE* field in EIS:

Post-Fire Safe Shutdown (PFSSD) Analysis

COMPUTER CODE: None VERSION: None

Administrative?	☐ YES ☒ NO	ASSOCIATED CHANGE #:	014658

REGULATORY REVIEWS:
- ☐ N/A - only if Administrative
- ☐ Attached
- ☒ Attached to: DCP 014658 R0 Evaluation #

USAR STATEMENT:
- ☐ Requires a change to the USAR:
- ☒ Does not require a change to the USAR

ANY DOCUMENTS IMPACTED?
- ☐ YES If yes, enter: Work Management Tool #, SWO #,
- ☒ NO and/or Condition Report #, if applicable

Status: ☒ COMMITTED ☐ FINAL ☐ VOID ☐ SUPERSEDED

ORIG	~~Bruce A Reed~~ ~~Howard L Meyer~~ William M. Wilkins	10/21/15 ~~5/15/14~~	ORIG		
	Printed Name / Signature	Date		Printed Name / Signature	Date
	QUALIFICATION REQUIRED: ES9280479			QUALIFICATION REQUIRED: ES9280479	
VERF	~~Brian Fox~~ Howard L Meyer	10/22/15 ~~5/20/14~~	VERF		
	Printed Name / Signature	Date		Printed Name / Signature	Date
	QUALIFICATION REQUIRED: ES9280479			QUALIFICATION REQUIRED: ES9280479	
APP	~~Vik Kanal~~ Jeff Sluter	10/22/2015 ~~6/10/14~~	APP		
	Printed Name / Signature	Date		Printed Name / Signature	Date

HOWARD L. MEYER LICENSED 7297 KANSAS PROFESSIONAL ENGINEER

Digitally signed by Howard Louis Meyer
Date: 2014.06.18 10:33:15 -05'00'

RPE Certification (For ASME Section III Stress Reports/Design Reports, refer to AP 05D-001 for qualification requirements)

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CALCULATION CHANGE NOTICE	Page 2
CCN NO. XX-E-013 (Base Calc No.) - ~~003~~ 004 (Rev No.) - ~~CN007~~ CN003 (Sequence No.)	

CALCULATION SUBJECT (Statement Of Problem) - Enter this in *SUBJECT* field in EIS:

Change package 14658 is replacing cable from EDGs speed signal generators to the EDGs speed switches. Appendices 1, 2 and 3 are updated to reflect these changes.

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CALCULATION DATABASE INPUT	Page 3 CCN NO. XX-E-013 - ~~003~~ 004 - ~~CN007~~ CN003 AM 10/1/15 Base Calc No. Rev No. Sequence No.

Link systems to the calculation/CCN in EIS.	
Systems Affected:	KJ
Develop relationships between interdependent calculations in EIS.	
Additional Calculations Providing Input to this calculation:	None
Additional Calculations Impacted by this calculation:	None
Develop relationships between the calculation/CCN and controlled reference documents in EIS.	
Additional Controlled Documents Inputs to this calculation:	None
Additional Controlled Documents Impacted by this calculation:	None
The reference documents listed below are those that cannot be linked to the calculation/CCN and shall be entered in the INDUSTRY REFERENCE field in EIS, e.g., ASME Codes, ANSI Standards, letters, etc.	
Additional Other Reference Documents:	DCP 014658
Link components to the calculation/CCN in EIS.	
Additional Components:	KJSE0066,KJSE0166,KJSS0066,KJSS0166

REFER TO DESKTOP GUIDE FOR PROCESSING CALCULATIONS IN EIS

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LIST OF EFFECTIVE PAGES

CCN NO. XX-E-013 - ~~003~~ 004 - ~~CN007~~ CN003 4/27/2015

Base Calc No. | Rev No. | Sequence No.

CCN Page No.	Calc. Page Affected DVR/SCRN/ Other
5	App 1, pg 60
6	App 2, pgs 4 and 5
7	App 2, pgs 9 and 10
8	App 3, pg 69
9-13	DVR

CCN Page No.	Calc. Page Affected /DVR/SCRN /Other

CCN Page No.	Calc. Page Affected /DVR/SCRN /Other

CCN Page No.	Calc. Page Affected /DVR/SCRN /Other

DVR = Design Verification Report (if applicable)
SCRN = Regulatory Screening (if applicable)
AD = Applicability Determination

Revise Appendix 1 Table as follows, per change package 14658. (Changes shown in boldface)

Calculation Appendix 1, Page 60

Standby diesel generator speed/frequency is adjusted using a hydraulic actuator controlled remotely from the control room (RL015) or locally in the standby diesel generator rooms on NE106 or NE107. **In addition, speed signal generators on the standby diesel generators provide input to speed switches in the diesel engine gauge and control panels (KJ121 and KJ122).** Speed/frequency controls required for PFSSD are identified in the following table:

COMPONENT	LOCATION	DESCRIPTION
KJHS0009	NE107	Diesel generator A master transfer hand switch
KJHS0001D	NE107	Diesel generator A emergency start hand switch
NEHS0005	RL015	Diesel generator A unit parallel hand switch
KJHS0007A	RL015	Diesel generator A raise/lower hand switch
KJHS0007B	NE107	Diesel generator A raise/lower hand switch
KJHS0109	NE106	Diesel generator B master transfer hand switch
KJHS0101D	NE106	Diesel generator B emergency start hand switch
NEHS0006	RL015	Diesel generator B unit parallel hand switch
KJHS0107A	NE106	Diesel generator B raise/lower hand switch
KJHS0107B	NE106	Diesel generator B raise/lower hand switch
KJSE0066	**KKJ01A**	**Diesel generator A speed signal generator**
KJSE0166	**KKJ01B**	**Diesel generator B speed signal generator**
KJSS0066	**KJ121**	**Diesel generator A speed switch**
KJSS0166	**KJ122**	**Diesel generator B speed switch**

CALCULATION SHEET	Page 6 CCN NO. XX-E-013 - ~~003~~ 004 - ~~CN007~~ CN003 11/10/24/15 Base Calc. No. Rev. No. Sequence No

Revise Appendix 2 Table A as follows, change cable identification from 11KJK01AM to 11KJK01AQ per change package 14658. (Changes shown in boldface)

TABLE A

OFF-SITE POWER AND EMERGENCY DIESEL GENERATOR CABLES

CABLE	ASSOCIATED BUS / DIESEL GENERATOR				DESCRIPTION
	NB01	DG A	NB02	DG B	
11KJK01AQ		X			Emergency Diesel A

Revise Appendix 2 Table A as follows, change cable identification from 14KJK03AM to 14KJK03AQ per change package 14658. (Changes shown in boldface)

TABLE A

OFF-SITE POWER AND EMERGENCY DIESEL GENERATOR CABLES

CABLE	ASSOCIATED BUS / DIESEL GENERATOR				DESCRIPTION
	NB01	DG A	NB02	DG B	
14KJK03AQ				X	Emergency Diesel B

CALCULATION SHEET	Page 7 CCN NO. XX-E-013 - ~~003~~ 004 - ~~CN007~~ CN003 10/14/15 Base Calc No. Rev No. Sequence No

Revise Appendix 2 Table B as follows, change cable identification from 11KJK01AM to 11KJK01AQ per change package 14658. (Changes shown in boldface)

TABLE B
OFF-SITE POWER CABLE ROUTING

CABLE	D		A			C																CC1	T-2	TURB	YARD
	1	2	8	16	27	5	6	9	10	11	12	15	16	17	18	21	22	23	24	27	30	33				
11KJK01AQ	X																									

Revise Appendix 2 Table B as follows, change cable identification from 14KJK03AM to 14KJK03AQ per change package 14658. (Changes shown in boldface)

TABLE B
OFF-SITE POWER CABLE ROUTING

CABLE	D		A			C																CC1	T-2	TURB	YARD
	1	2	8	16	27	5	6	9	10	11	12	15	16	17	18	21	22	23	24	27	30	33				
14KJK03AQ		X																								

CALCULATION SHEET	CCN NO. XX-E-013 - ~~003~~ 004 - ~~CN007~~ CN003	
	Base Calc No. / Rev No. / Sequence No	

RMM 10/21/15

Revise Appendix 3 as follows to add DG Speed Signal Generators and Speed Switches to the PFSSD equipment list and to revise the PFSSD equipment list per change package 14658. (Changes shown in boldface)

Component ID	S/G	Description	Room	Fire Area	Instrument Location	SSD Fun	Sprtd Fun	Hot Stdby	Cold Shdwn	Normal Shdwn	Alt Shdwn	P&ID	Schematic / One Line	Other Drawings	Power Source	Notes	REV
KJSE0066	1	Diesel Generator A Speed Signal Generator	5203	D-1	KKJ01A	S	R, M, H	X	X	X	---	---	E-13KJ01A	M-018-00106 M-018-00259/1	---	---	4
KJSE0166	4	Diesel Generator B Speed Signal Generator	5201	D-2	KKJ01B	S	R, M, H	X	X	X	X	---	E-13KJ03A	M-018-00106 M-018-00259/2	---	---	4
KJSS0066	1	Diesel Generator A Speed Switch	5203	D-1	KJ121	S	R, M, H	X	X	X	---	---	E-13KJ01A	M-018-00106 M-018-00259/1	---	---	4
KJSS0166	4	Diesel Generator B Speed Switch	5201	D-2	KJ122	S	R, M, H	X	X	X	X	---	E-13KJ03A	M-018-00106 M-018-00259/2	---	---	4

DESIGN VERIFICATION REPORT	DOCUMENT NO. XX-E-013-~~003-CN007~~ 004-CN003	REV. 0

DOCUMENT TITLE: Post-Fire Safe Shutdown (PFSSD) Analysis

ORIGINATOR: Bruce Reed/Howard Meyer

DESIGN VERIFIED:	SAFETY CLASSIFICATION:	VERIFICATION METHOD:
☐ PRELIMINARY	☐ SAFETY-RELATED	☒ DESIGN REVIEW
☒ FINAL	☒ SPECIAL SCOPE	☐ ALTERNATE CALCULATION
☐ REVISION	☐ NON-SAFETY RELATED	☐ TESTING

☒ INDIVIDUAL VERIFICATION	SIGNATURE: Brian R. Fox QUALIFICATION REQUIRED--- ES9280465 OR ES9280479	DATE:	5/20/2014

☐ TEAM VERIFICATION

Scope Verified:	SIGNATURE:	DATE:

TEAM LEADER SIGNATURE: **DATE:**

QUALIFICATION REQUIRED ES9280465 OR ES9280479

*** Team leader signature certifies that adequate interfaces and overlaps have occurred.**

OVERVIEW (PURPOSE AND SCOPE):

Change package 14658 is replacing cable from EDGs speed signal generators to the EDGs speed switches. Appendices 1, 2 and 3 of Calculation XX-E-013 are updated to reflect these changes. The EDG speed signal generators and the EDG speed switches are being added as PFSSD components.

CRUCIAL AREAS:

1. Verify that the new components and cable numbers are accurately depicted.
2. Verify the Database Input sheet is filled out correctly.
3. Verify the assumptions and methodology of the parent calculation are maintained.

ALTERNATE OR INDEPENDENT ITEMS USED FOR VERIFICATION:

1. Calculation XX-E-013, Rev. 3
2. DCP 14658 and associated drawings.

DESIGN VERIFICATION REPORT	DOCUMENT NO. XX-E-013-~~003-CN007~~ 004-CN003	REV. 0

COMMENTS:	ORIGINATOR'S RESPONSE:
1. Delete E-1F9910 from the Additional Controlled Documents on page 3 of the CCN. E-1F9910 is not used as an input to XX-E-013.	Deleted E-1F9910 from the Additional Controlled Documents .
2. On Page 3, Additional Components the components are duplicated. Two of the components should be 'SS' instead of 'SE'.	Corrected Asset numbers.
3. On Page 5, In the new wording in the paragraph above the table replace KJ12 with KJ122.	Corrected Asset number.
4. On Page 8, add instrument locations for the four new components consistent with the table on page 5. Also in the Other Drawings column, add the applicable sheet number following drawing M-018-00259.	Added instrument locations and appropriate sheet numbers to drawings.

CONCLUSIONS:

Following incorporation of the above comments, the calculation change notice accurately reflects the crucial areas selelected for review and is acceptable.

DESIGN VERIFICATION REPORT	DOCUMENT NO. XX-E-013-~~003-CN007~~ 001-CN003 11/04/15	REV. 0

TABLE A (This table is required for change packages, or when required by a Supervisor.) If the answer to the question is yes, then provide a descriptive answer that explains why you came to this conclusion. If the question is not applicable, then provide a descriptive explanation detailing why it is not applicable.

1. Were the design inputs correctly selected and incorporated into the design?
2. Are assumptions, necessary to perform the design activity, documented, adequately described and reasonable?
3. Are the appropriate quality and quality assurance requirements specified?
4. Are the applicable codes, standards and regulatory requirements, including issue and addenda, properly identified and are their requirements for design met?
5. Has applicable plant and industry construction and operating experience been considered?
6. Have the hardware interface design requirements been satisfied?
7. Is the output reasonable compared to input?
8. Are the specified parts, equipment and processes suitable for the required application?
9. Are the specified materials compatible with each other and the design environmental conditions to which the material will be exposed?

DESIGN VERIFICATION REPORT	DOCUMENT NO. XX-E-013-~~003-CN007~~ 001-CN003 10/2/15	REV. 0

TABLE A (This table is required for change packages, or when required by a Supervisor.) If the answer to the question is yes, then provide a descriptive answer that explains why you came to this conclusion. If the question is not applicable, then provide a descriptive explanation detailing why it is not applicable.

10. Have adequate maintenance features and requirements been specified?
11. Are accessibility and other design provisions adequate for performance of needed maintenance and repair?
12. Has adequate accessibility been provided to perform the in-service inspection expected to be required during the plant life?
13. Has the design properly considered radiation exposure to the public and plant personnel?
14. Have adequate pre-operational and subsequent periodic test requirements been appropriately specified?
15. Does each document contain the required signatures and date?
16. If a computer program was used in the analysis, has the program been verified?
17. If a component has been added, has a Safety Classification Analysis been completed?
18. Were the commitments provided in the USAR and the Design Criteria documents correctly incorporated into the design documents?

DESIGN VERIFICATION REPORT	DOCUMENT NO. XX-E-013-~~003-CN007~~ 004-CN003 10/4/15	REV. 0

TABLE A (This table is required for change packages, or when required by a Supervisor.) If the answer to the question is yes, then provide a descriptive answer that explains why you came to this conclusion. If the question is not applicable, then provide a descriptive explanation detailing why it is not applicable.

19. Have the appropriate design documents been identified and/or updated?
20. Has warehouse stock been considered for modification or retirement?