Enclosure 1

Response to NRC Request for Additional Information
RAI No. 177, Question 09.05.01-13, Fire Protection Program,
Calvert Cliffs Nuclear Power Plant, Unit 3

RAI No 177

Question 09.05.01-13

RG 1.189 Regulatory Position 6.1.8 states that "Diesel generators important to safety should be separated from each other and from other areas of the plant by fire barriers that have a fire resistance rating of at least 3 hours." The Switchgear Building contains the Station Blackout Diesel Generators, which are considered important to safety since they perform a safety function. As per Figure 9B-11 the redundant Station Blackout Diesel Engine Rooms are separated by 2 hour fire barriers. These 2 hour barriers do not meet the RG 1.189 guidance of 3 hours. The applicant needs to change the barriers to 3 hour rated barriers or demonstrate why the 2 hour barriers are acceptable. Additionally, the barrier rating for the barrier between the Switchgear Building and the Nuclear Island is not clear on the Switchgear Building Appendix 9B figures. The applicant needs to clearly show that the barriers are 3 hour rated and if not 3 hour rated justify that lower rated barriers are acceptable.

Response

In response to U.S. EPR Design Certification Application RAI No. 71, Question 03.02.01-1[1], AREVA stated that the term "important to safety" is not used in the U.S. EPR FSAR to classify systems, structures and components (SSCs). U.S. EPR Tier 2 FSAR, Section 3.2 identifies that the U.S. EPR safety classification methodology uses the following designations:

- Safety-related (S)
- Non-safety-related (NS)
- Supplemented grade (NS-AQ)

The SBO diesel generators do not perform any safety functions, as defined in 10 CFR 50.2, and therefore, do not satisfy the definition for safety-related. Also, U.S. EPR Tier 2 FSAR, Table 3.2.2.-1, classifies the SBO diesel generators as NS-AQ. U.S. EPR Tier 2 FSAR, Section 3.2 defines NS-AQ as non-safety-related, with significant licensing requirements or commitments (10 CFR 50.63 and Regulatory Guide (RG) 1.155). Based on conservative industry practices consistent with RG 1.189, the fire barrier rating between SBO diesel generators will be changed to a three-hour rating. This change will be reflected in COLA FSAR Appendix 9B, Table 9B-2 and Figure 9B-10 through Figure 9B-14.

The Nuclear Island three-hour fire barriers for Safeguards Building 2 are shown in the U.S. EPR FSAR Figures 9A-17 through 9A-27. COLA FSAR Figure 9B-11 only shows the fire boundary for the Switchgear Building wall near the Nuclear Island buildings.

Additionally, in response to U.S. EPR Design Certification Application RAI No. 151, Question 09.05.01-57[2], AREVA stated the outside oil filled transformers are separated from plant buildings by either distance or fire barriers. Where the distance from transformer to plant building is less than 50 feet, three-hour fire barriers without openings are provided for

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1 R. Pederson (AREVA) to G. Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 71 (1055), FSAR Ch. 3," email dated November 14, 2008.

2 R. Wells (AREVA) to G. Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 151, FSAR Ch. 9," email dated January 30, 2009.

separation. Therefore, where necessary, the fire barrier rating for the Transformer Area will also be changed to a three-hour rating (Figure 9B-15).

COLA Impact

COLA FSAR Appendix 9B, Figures 9B-10, 9B-11, 9B-12, 9B-13, and 9B-14 will be replaced with the new figures provided in Enclosure 3 in a future COLA revision.

COLA FSAR Appendix 9B, Table 9B-2 will be updated and Figure 9B-15 will be replaced with the new Figure 9B-15 as follows in a future COLA revision:

Table 9B-2—{Fire Area Parameters}

(Page 2 of 16)

Column	6	7	8	9	10
Fire Area	FA-UMA-06	FA-UMA-07	FA-UMA-08	FA-UBA-01	FA-UBA-02
Building or Area	UMA	UMA	UMA	UBA	UBA
Figures	Figures 9B-1 through 9B-4, 6	Figures 9B-2, 9	Figures 9B-3, 7, 8	Figures 9B-10,14	Figures 9B-11, 12, 13, 14
Fire Barriers (Notes 3,4,5,6)	See Figures	See Figures	See Figures	See Figures	See Figures
SSC: important to safety	None	Yes	Yes	~~Yes~~ None	~~Yes~~ None
SCC: post-fire safe shutdown	None	None	None	None	None
In situ Loading (Note 1)	a, c, d, e, g, j	d	a, c, d, e, g, j	a, b, c, d, e, g, j, n	a, b, c, d, e, g, j, k, n, s
Transient Fire Loading	THL-2	THL-2	THL-2	THL-2	THL-2
Common Ignition Source (Note 2a)	a, b, m	a	a, b, c, d, m	a, b, c, d, g, m	a, b, c, d, g, i, k, m
Atypical Ignition Sources (Note 2b)	None	ee	ee	aa, ee	aa, ee
Hazard Classification (Note 13)	OH Group-1	EH Group-2	EH Group-2	EH Group-2 EH Group-1 Light	EH Group-2 OH Group-1 Light
Automatic Fire Detection	No	No	No	Yes (Hazard specific) 01-001 Cable Spread Rm 1 01-002 Cable Spread Rm 2 01-004 SBO Cable Spread Rm 1 01-005 SBO Cable Spread Rm 2 01-003 SBO Diesel Tank Rm 1 01-006 SBO Diesel Tank Rm 2	Yes (Hazard specific) 02-001 MV Dist Bd Rm 1 02-002 LV Main Dist Rm 1 02-003 LV Main Dist Rm 2 02-004 MV Dist Bd Rm 2 02-006 SBO Control Rm 1 02-007 SBO Control Rm 2 02-005 Engine Rm 1 02-008 Engine Rm 2
Manual Fire Alarms	Yes	Yes	Yes	Yes	Yes

Table 9B-2—Fire Area Parameters

Column	6 (cont'd)	7 (cont'd)	8 (cont'd)	9 (cont'd)	10 (cont'd)
Automatic Fixed Fire Suppression	Yes	Yes	Yes	Yes (Hazard specific) Auto wet-pipe: SBO Diesel Tank Rooms, SBO Aux. Equip. Rms, and Corridor Auto double interlock pre-action: Cable Spreading Rooms	Yes (Hazard specific) Auto wet-pipe: Engine Rooms, Aux. Boiler Equip. Rm and Corridor Auto double interlock pre-action: MV and LV Distrib Board Rms and SBO Control Rooms
Manual Fixed Fire Suppression	No	No	No	No	No
Standpipe and Hose System (Note 7)	Yes	Yes	Yes	Yes	Yes
Portable Fire Extinguishers (Note 8)	Yes	Yes	Yes	Yes	Yes
Suppression Affects	Note 14	Note 14	Note 14	Note 14	Note 14
Plant Drains	Note 9	Note 9	Note 9	Note 9	Note 9

Table 9B-2—{Fire Area Parameters}
(Page 4 of 16)

Column	11	12	13	14	15
Fire ~~Area~~	FA-UBA-03	FA-UBA-04	FA-UBE-01	FA-UBE-02	FA-UBE-03
Building or Area	UBA	UBA	UBE	UBE	UBE
Figures	Figures 9B-12, 14	Figures 9B-13, 14	Figure 9B-15	Figure 9B-15	Figure 9B-15
Fire Barriers (Notes 3,4,5,6)	See Figures	See Figures	See Figure	See Figure	See Figures
SSC: important to safety	~~Yes~~ None	~~Yes~~ None	~~Yes~~ None	None	None
SCC: post-fire safe shutdown	None	None	None	None	None
In situ Loading (Note 1)	a, c, g, e	a, b, c, e, f, g, h, m	a, e, g, l	a, e, g, l	a, e, g, l
Transient Fire Loading	THL-2	THL-2	THL-2	THL-2	THL-2
Common Ignition Source (Note 2a)	a, b, g, m	a, b, g, j, k, m	a, b, f	a, b, f	a, b, f
Atypical Ignition Sources (Note 2b)	aa	aa	aa, ee, ff	aa, ee, ff	aa, ee, ff
Hazard Classification (Note 13)	EH Group-1 Light	OH Group-2 OH Group-1 Light	EH Group-2	EH Group-2	EH Group-2
Automatic Fire Detection	Yes (Hazard specific) 03-001 Cable Dist Div., Rm 1 03-002 Cable Dist Div., Rm 2	Yes (Hazard specific) 04-001 Battery Rm 1 04-002 Battery Chgr Rm 1 04-003 I&C C&P Panel Rm 1 04-004 I&C C&P Panel Rm 2 04-005 Battery Chgr Rm 2 04-006 Battery Rm 2	Yes	Yes	Yes
Manual Fire Alarms	Yes	Yes	No	No	No
Automatic Fixed Fire Suppression	Yes (Hazard specific) Auto wet-pipe: Corridor Auto double interlock pre-action: Cable Distribution Division Rooms	Yes (Hazard specific) Auto wet-pipe: Air Handling Rms and Corridor Auto double interlock pre-action: Battery Rms, Battery Charger Rms, and I&C Control / Protection Panel Rms	Yes	Yes	Yes
Manual Fixed Fire Suppression	No	No	No	No	No

Table 9B-2—{Fire Area Parameters}

(Page 6 of 16)

Column	16	17	18	19	20
Fire Area	FA-UBE-04	FA-UBE-05	FA-UBF-01	FA-UBF-02	FA-UBF-03
Building or Area	UBE	UBE	UBF	UBF	UBF
Figures	Figure 9B-15	Figure 9B-15	Figure 9B-15	Figure 9B-15	Figure 9B-15
Fire Barriers (Notes 3,4,5,6)	See Figures	See Figures	See Figures	See Figures	See Figures
SSC: important to safety	None	~~Yes~~ None	None	None	None
SCC: post-fire safe shutdown	None	None	None	None	None
In situ Loading (Note 1)	a, e, g, l	a, e, g, l	a, e, g, l	a, e, g, l	a, e, g, l
Transient Fire Loading	THL-2	THL-2	THL-2	THL-2	THL-2
Common Ignition Source (Note 2a)	a, b, f	a, b, f	a, b, f	a, b, f	a, b, f
Atypical Ignition Sources (Note 2b)	aa, ee, ff	aa, ee, ff	aa, ee, ff	aa, ee, ff	aa, ee, ff
Hazard Classification (Note 13)	EH Group-2	EH Group-2	EH Group-2	EH Group-2	EH Group-2
Automatic Fire Detection	Yes	Yes	Yes	Yes	Yes
Manual Fire Alarms	No	No	No	No	No
Automatic Fixed Fire Suppression	Yes	Yes	Yes	Yes	Yes
Manual Fixed Fire Suppression	No	No	No	No	No
Standpipe and Hose System (Note 7)	No	No	No	No	No
Portable Fire Extinguishers (Note 8)	No	No	No	No	No
Suppression Affects	Note 14	Note 14	Note 14	Note 14	Note 14
Plant Drains	Note 9	Note 9	Note 9	Note 9	Note 9
Radiological Affects	None	None	None	None	None
HVAC	Note 10	Note 10	Note 10	Note 10	Note 10
Emergency Lighting (Note 11)	None	None	None	None	None
Communication (Note 12)	Yes	Yes	Yes	Yes	Yes
Engineering Evaluations	None	None	None	None	None

Figure 9B-15—{CCNPP Unit 3 Fire Barrier Location, Transformer Area Plan View at Elevation 0'-0" }

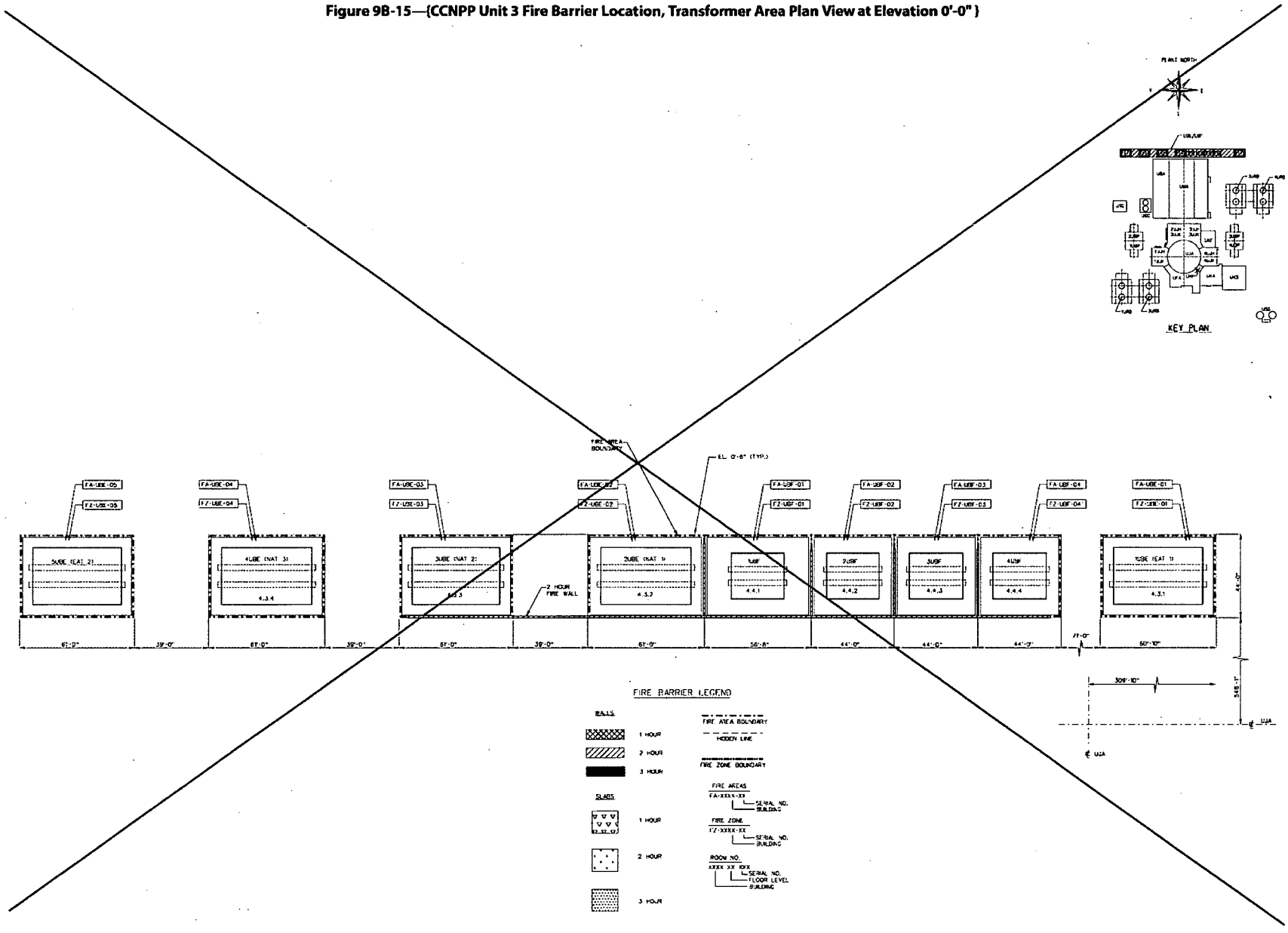
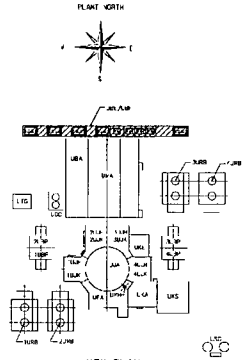
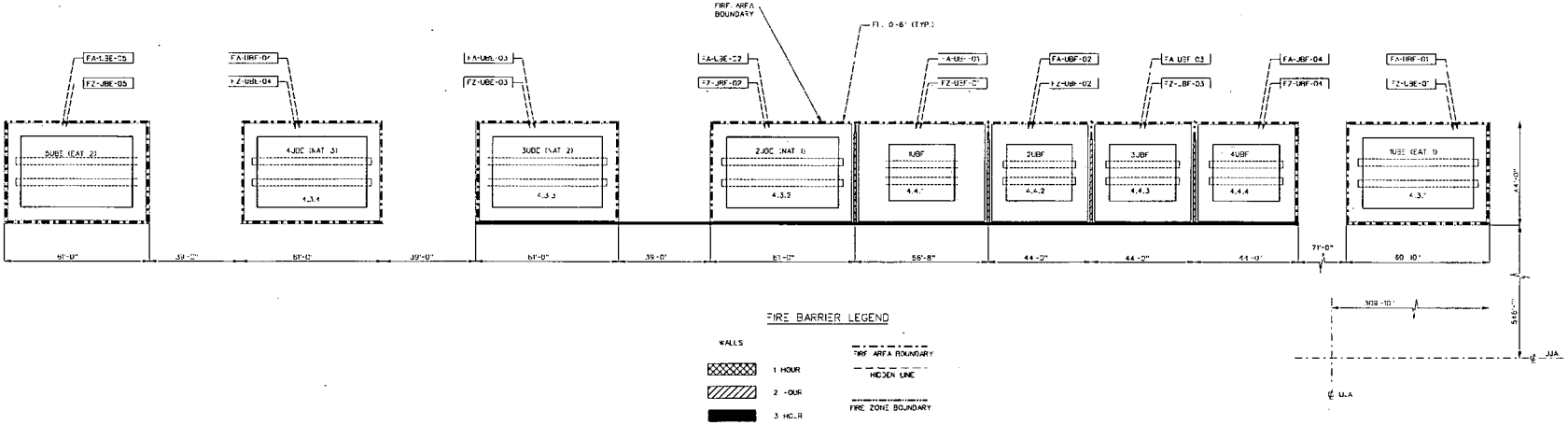


Figure 9B-15 --{CCNPP Unit 3 Fire Barrier Location, Transformer Area Plan View at Elevation 0'-0" }

NOTES:

1. ONE OF SIGHT SEPARATION BETWEEN TRANSFORMERS AND ADJACENT BUILDINGS WILL NOT BE LESS THAN 50 IN ACCORDANCE WITH THE RECOMMENDATIONS OF NFPA 804 (2006).
2. LINE OF SIGHT SEPARATION BETWEEN TRANSFORMERS WILL NOT BE LESS THAN 30' IN ACCORDANCE WITH THE RECOMMENDATIONS OF NFPA 804 (2006).
3. THIS DRAWING IS FOR AREVA'S FIRE HAZARD ANALYSIS ONLY.





FIRE BARRIER LEGEND

WALLS

1 HOUR

2 HOUR

3 HOUR

SLABS

1 HOUR

2 HOUR

3 HOUR

FIRE AREA BOUNDARY

HIDDEN LINE

FIRE ZONE BOUNDARY

FIRE AREAS
FA-XXXX-XX
SERIAL NO.
BUILDING

FIRE ZONE
FZ-XXXX-XX
SERIAL NO.
BUILDING

ROOM NO.
XXXX XX XXX
SERIAL NO.
FLOOR LEVEL
BUILDING

Enclosure 2

Redacted Information Related to
NRC Request for Additional Information,
RAI No. 177, Question 09.05.01-13, Fire Protection Program,
Calvert Cliffs Nuclear Power Plant, Unit 3

Security-Related Information Withheld under 10 CFR 2.390

Figure 9B-10 --{CCNPP Unit 3 Fire Barrier Location, SWGR/SBO Buildings Plan View at Elevation (-)13'-0"}

SECURITY SENSITIVE

Figure 9B-11 –{CCNPP Unit 3 Fire Barrier Location, SWGR/SBO/AUX BLR Buildings Plan View at Elevation 0'-0"}

SECURITY SENSITIVE

Figure 9B-12 –{CCNPP Unit 3 Fire Barrier Location, SWGR/SBO/AUX BLR Buildings Plan View at Elevation 13'-0"}

SECURITY SENSITIVE

Figure 9B-13 --{CCNPP Unit 3 Fire Barrier Location, SWGR/SBO/AUX BLR Buildings Plan View at Elevation 24'-6"}

SECURITY SENSITIVE

Figure 9B-14 --{CCNPP Unit 3 Fire Barrier Location, SWGR/SBO/AUX BLR Buildings, Plan View Section A-A}

SECURITY SENSITIVE