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Vogtle Project

July 2, 1986

Director of Nuclear Reactor Regulation
Attention: Mr. B. J. Youngblood
PWR Project Directorate #4
Division of PWR Licensing A
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

File: X7BC35
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NRC DOCKET NUMBERS 50-424 AND 50-425
CONSTRUCTION PERMIT NUMBERS CPPR-108 AND CPPR-109
VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
SER OPEN ITEM 7: FIRE PROTECTION

Dear Mr. Denton:

In Amendment 24 to the VEGP FSAR, a revised version of Appendix 9A, Fire Hazards Analysis, was included as part of GPCs effort to resolve the fire protection open item. Due to a collating error, pages 9A.1.82-1 through 14 and pages 9A.1.83-1 through 5 were omitted. Attached are the omitted pages. These pages will be included in Amendment 25.

Sincerely,

J. A. Bailey
Project Licensing Manager

JAB/caa
Enclosure

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9.A.1.82 FIRE AREA 1-CB-L1-B

A. Location: Control Building, Level 1

B. Figure: 9A-21

C. Description: Includes fire zones 109, 111, 112, 113, 114, 115, 116, 117, 118, 119, 124, 183B, 185

Drum storage and first aid rooms, corridors, health physics storage, secured storage, gas bottle storage, offices, laundry and decontamination rooms, clean issue room, H.P. station, reception room, vestibules, conference, lunch and storage rooms, toilets, janitor rooms, lockers and shower facilities, whole body count room, low level laboratory, radio chem laboratory, sample room, technical work room, and instrument repair room.

D. Description of Boundaries:

- Floor - 3-h-rated barrier separates area from 1-CB-LA-K, 1-CB-LA-N, 1-CB-LA-L, 1-CB-LA-U, 1-CB-LA-M, 2-CB-LA-M, 2-CB-LA-K, 2-CB-LA-L, 2-CB-LA-S, 2-CB-LA-I, 2-CB-LA-H, 2-CB-LA-G.
- Ceiling - 3-h-rated barrier separates area from 1-CB-L2-E, 2-CB-L2-E.
- North
 - 2-h-rated barrier separates area from stairwell No. 1, 4, elevator No. 1.
 - 3-h-rated barrier separates area from 1-CB-L1-G, 1-CB-L1-A, 2-CB-L1-A, 2-CB-L1-F, 2-CB-LC-B.
 - Unrated exterior area boundary.
 - 1-h-rated barrier separates area from yard.
- South - 3-h-rated barrier separates area from 1-AB-LD-B.
- East - 3-h-rated barrier separates area from 1-CB-L1-D, 1-CB-L1-C, 1-CB-L1-TSC, 1-AB-L2-A.

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- 2-h-rated barrier separates area from elevator No. 2, stairwell No.2.
- West
 - 3-h-rated barrier separates area from 1-CB-LC-D, 2-CB-L1-D, 2-CB-L1-C, 1-CB-LB-S, 2-CB-LA-D, 2-AB-L2-A.
 - Unrated exterior area boundary.
- Interior
 - 3-h-rated barrier separates area from 1-AB-LD-PC, 1-CB-L3-M, 1-CB-LC-A.
 - 2-h-rated barrier separates area from stairwell.
 - 3-h-rated barrier separates health physics storage from corridor.
 - 3-h-rated barrier separates lobby from personnel contamination monitoring room and women's toilet.
 - 1-h-rated life safety wall separates drum storage from corridor.
 - 1-h-rated life safety wall separates first aid, decontamination, and storage rooms from reception and corridor.
 - 1-h-rated life safety wall separates storage, personnel contamination monitoring room, and lobby from corridor.
 - 1-h-rated life safety wall separates men's toilet, lockers, and shower from corridor.
 - 1-h-rated life safety wall separates office, whole body count room, low level laboratory, sample room, radiochemistry lab, and technical work room from corridor.
 - 1-h-rated life safety wall separates instrumentation, instrument repair room, and storage room from corridor.
 - 1-h-rated life safety wall separates record storage from corridor.

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- 1-h-rated life safety ceiling on personnel contamination monitoring room.
- 1-h-rated life safety ceiling on corridors (rooms 128 and 120).

E. Area Access

- North
 - Class A door from 1-CB-L1-G, 2-CB-L1-A.
 - Two Class A doors from 1-CB-L1-A.
 - Certified Class A door from outside.
 - Class B doors from stairwell No. 4.
- East
 - Certified Class A door from 1-CB-L1-TSC.
 - Certified Class A door from 1-AB-L2-A.
- West
 - Two Class A doors from 2-AB-L2-A.
 - Certified Class A door from 2-AB-L2-A.
 - Two Class B doors from stairwell No. 2.
- Interior
 - Class B door separates health physics storage from corridor.
 - Class A door in life safety wall separates drum storage from corridor.
 - Class B door in life safety wall separates first aid room from corridor.
 - Class B door in life safety wall separates decontamination room from corridor.
 - Class A door in life safety wall separates lobby from corridor.
 - Class B door in life safety wall separates women's toilet from corridor.
 - Class A door separates lobby from personnel contamination monitoring room.

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- Class B door in life safety wall separates personnel contamination monitoring room from corridor.
- Class B door in life safety wall separates men's toilet and locker room from corridor.
- Two Class B doors from stairwell.
- Class B door in life safety wall separates office from corridor.
- Class B door in life safety wall separates whole body count room from corridor.
- Class B door in life safety wall separates low level laboratory from corridor.
- Class B door in life safety wall separates radiochemistry laboratory from corridor.
- Two class B doors in life safety wall separate instrumentation and instrument repair room from corridors.
- Two Class B doors in life safety wall separate gas bottle storage from corridor.

F. Sealed Penetrations

Seals meet or exceed fire barrier ratings.

G. Fire Dampers

Dampers meet or exceed fire barrier ratings.

H. Safe Shutdown Components

- 1HV12128 - Control room fan discharge damper.
- 1HV12129 - Control room fan discharge damper.
- 1HV12130 - Control room fan return damper.
- 1HV12131 - Control room fan return damper.

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- Train A safe shutdown cables.
- Train B safe shutdown cables.

I. Safety-Related Equipment

No major equipment other than safe shutdown equipment.

J. Nonsafety-Related Equipment

- Repair and test equipment.
- Instruments
- Health, physics equipment.
- Laboratory equipment.

K. Combustible Loading

1. Zone No. 109

- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 50 lb
 - Oil/grease 0 lb
 - Plastics 50 lb
 - Rubber goods 0 lb
- Heat release
 - Fixed combustibles 1,012,500 Btu
 - Transient combustibles 1,012,500 Btu
- Combustible loading 15,577 Btu/ft²
- Fire severity (wood equivalent) 12 min

2. Zone No. 111

- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 100 lb
 - Oil/grease 0 lb

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- Plastics 3,550 lb
 - Rubber goods 0 lb
 - Heat release
 - Fixed combustibles 44,287,500 Btu
 - Transient combustibles 42,662,500 Btu
 - Combustible loading 68,953 Btu/ft²
 - Fire severity (wood equivalent) 52 min
3. Zone No. 112
- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 307 lb
 - Oil/grease 0 lb
 - Plastics 2,860 lb
 - Rubber goods 0 lb
 - Compressed gas 2,476,900 Btu
 - Heat release
 - Fixed combustibles 39,967,900 Btu
 - Transient combustibles 35,435,000 Btu
 - Combustible loading 50,776 Btu/ft²
 - Fire severity (wood equivalent) 38 min
4. Zone No. 113
- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 1,743 lb
 - Charcoal 1,187 lb
 - Cellulosic materials 0 lb
 - Oil/grease 100 lb
 - Plastics 0 lb
 - Rubber goods 0 lb
 - Heat release
 - Fixed combustibles 24,661,760 Btu
 - Transient combustibles 9,096,000 Btu

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- Combustible loading 42,303 Btu/ft²
- Fire severity (wood equivalent) 32 min
- 5. Zone No. 114
 - Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 2,000 lb
 - Oil/grease 0 lb
 - Plastics 1,000 lb
 - Rubber goods 2,000 lb
 - Heat release
 - Fixed combustibles 48,250,000 Btu
 - Transient combustibles 20,400,000 Btu
 - Combustible loading 147,313 Btu/ft²
 - Fire severity (wood equivalent) 110 min
- 6. Zone No. 115
 - Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 168 lb
 - Charcoal 1,000 lb
 - Cellulosic materials 0 lb
 - Oil/grease 500 lb
 - Plastics 0 lb
 - Rubber goods 0 lb
 - Heat release
 - Fixed combustibles 15,470,200 Btu
 - Transient combustibles 8,400,000 Btu
 - Combustible loading 15,673 Btu/ft²
 - Fire severity (wood equivalent) 12 min

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7. Zone No. 116

• Fixed combustible quantities

- Cable insulation (equivalent hypalon value)	0 lb
- Charcoal	0 lb
- Cellulosic materials	500 lb
- Oil/grease	0 lb
- Plastics	100 lb
- Rubber goods	0 lb

• Heat release

- Fixed combustibles	5,225,000 Btu
- Transient combustibles	4,400,000 Btu

• Combustible loading 11,513 Btu/ft²

• Fire severity (wood equivalent) 9 min

8. Zone No. 117

• Fixed combustible quantities

- Cable insulation (equivalent hypalon value)	0 lb
- Charcoal	0 lb
- Cellulosic materials	1,000 lb
- Oil/grease	76 lb
- Plastics	100 lb
- Rubber goods	0 lb

• Heat release

- Fixed combustibles	10,745,000 Btu
- Transient combustibles	8,400,000 Btu

• Combustible loading 38,992 Btu/ft²

• Fire severity (wood equivalent) 29 min

9. Zone No. 118

• Fixed combustible quantities

- Cable insulation (equivalent hypalon value)	0 lb
- Charcoal	0 lb

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- Cellulosic materials 0 lb
- Oil/grease 0 lb
- Plastics 664 lb
- Rubber goods 0 lb
- Heat release
 - Fixed combustibles 8,134,000 Btu
 - Transient combustibles 8,534,000 Btu
- Combustible loading 7,573 Btu/ft²
- Fire severity (wood equivalent) 6 min

10. Zone No. 119

- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 600 lb
 - Oil/grease 0 lb
 - Plastics 216 lb
 - Rubber goods 0 lb
- Heat release
 - Fixed combustibles 7,446,000 Btu
 - Transient combustibles 3,046,000 Btu
- Combustible loading 12,329 Btu/ft²
- Fire severity (wood equivalent) 9 min

11. Zone No. 124

- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 413 lb
 - Oil/grease 0 lb
 - Plastics 0 lb
 - Rubber goods 0 lb

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- Heat release
 - Fixed combustibles 3,304,000 Btu
 - Transient combustibles 3,704,000 Btu
- Combustible loading 4,970 Btu/ft²
- Fire severity (wood equivalent) 4 min

12. Zone No. 183B

- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 0 lb
 - Oil/grease 0 lb
 - Plastics 0 lb
 - Rubber goods 0 lb
- Heat release
 - Fixed combustibles 0 Btu
 - Transient combustibles 400,000 Btu
- Combustible loading 3,571 Btu/ft²
- Fire severity (wood equivalent) 3 min

13. Zone No. 185

- Fixed combustible quantities
 - Cable insulation (equivalent hypalon value) 0 lb
 - Charcoal 0 lb
 - Cellulosic materials 500 lb
 - Oil/grease 0 lb
 - Plastics 0 lb
 - Rubber goods 0 lb
- Heat release
 - Fixed combustibles 4,000,000 Btu
 - Transient combustibles 4,400,000 Btu

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- Combustible loading 16,834 Btu/ft²
- Fire severity (wood equivalent) 13 min

L. Evaluation of Safe Shutdown Capability

1. For a fire in this area, use safe shutdown Train A.
2. Special operational and design considerations:

Fire damage to the control room essential cooling system dampers HV-12128, HV-12129, HV-12130, and HV-12131 may require that the plant shutdown be achieved from the Train A remote shutdown panel should the control room become uninhabitable due to lack of cooling.

- 3 Spurious actuation considerations:
 - a. Main steam atmospheric dump valve PV-3010 may open due to a fire in this fire area.
 - b. Main steam atmospheric dump valve PV-3020 may open due to a fire in this fire area.

M. Fire Detection

The following type(s) of fire detectors are installed within the area:

- Zone 109
 - Ionization smoke detection.
- Zone 111
 - Ionization smoke detection.
- Zone 112
 - Ionization smoke detection.
 - Manual pull station.
- Zone 113
 - Ionization smoke detection.

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- Zone 114
 - Ionization smoke detection.
- Zone 115
 - Ionization smoke detection.
- Zone 116
 - Ionization smoke detection.
- Zone 117
 - Ionization smoke detection.
- Zone 118
 - Ionization smoke detection.
 - Manual pull station.
- Zone 119
 - Ionization smoke detection.
- Zone 124
 - Ionization smoke detection.
- Zone 183B
 - Ionization smoke detection.
 - Manual pull station.
- Zone 185
 - Ionization smoke detection

N. Fire Suppression

1. Automatic

- Zone 109 preaction sprinkler system - Total zone coverage.
- Zone 111 preaction sprinkler system - Partial zone coverage.

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- Zone 112 - No zone coverage.
- Zone 113 preaction sprinkler system - Partial zone coverage.
- Zone 114 - No zone coverage.
- Zone 115 - No zone coverage.
- Zone 116 - No zone coverage.
- Zone 117 preaction sprinkler system - Total zone coverage.
- Zone 118 preaction sprinkler system - Partial zone coverage.
- Zone 119 - No zone coverage.
- Zone 124 preaction sprinkler system - Partial zone coverage.
- Zone 183B - No zone coverage.
- Zone 185 - No zone coverage.

2. Manual

Hose stations (with portable extinguishers) are conveniently located to each area. Any location can be reached with at least one effective water stream. Independent Seismic Category 1 dry standpipe system provides alternate source of water for post-SSE fire fighting.

O. Radioactive Material

Laboratory samples in the radio chem lab and sample room.

Clothing

P. Ventilation

Smoke can be removed using the normal ventilation system in a once-through only mode of operation. For areas isolated by fire dampers, smoke may be removed by portable fans using flexible tubes to direct the smoke to an area capable of being ventilated or directly to outside.

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Q. Drainage

A flooding analysis has determined that drainage from the fire areas is adequate.

R. Emergency Lighting

8-h rated battery fixture(s) provide safe ingress/egress of personnel.

S. Deviations and Justifications

1. Unrated exterior fire area boundary:

See Appendix 9B, Section C.5.a(1).

2. Unlabeled doors:

See Appendix 9B, Section C.5.a(5).

9.A.1.83 FIRE AREA 1-CB-L1-C

A. Location: Control Building, Level 1, Level 2

B. Figure: 9A-21, 9A-23

C. Description: Includes fire zone 176

Train B electrical shaft.

D. Description of Boundaries:

1. Level 1

- Floor - 3-h-rated barrier separates area from 1-CB-LA-R.
- North - 3-h-rated barrier separates area from 1-CB-L1-B.
- South - 3-h-rated barrier separates area from 1-CB-L1-D.
- East - 3-h-rated barrier separates area from 1-AB-L2-A.
- West - 3-h-rated barrier separates area from 1-CB-L1-B.

2. Level 2

- North - 3-h-rated barrier separates area from 1-CB-L2-E.
- East - Unrated exterior area boundary.
- South - 3-h-rated barrier separates area from 1-CB-L1-D.
- West - 3-h-rated barrier separates area from 1-CB-L2-E.
- Ceiling - 3-h-rated barrier separates area from 1-CB-L3-A.
- Floor - 3-h-rated barrier separates area from 1-CB-L1-B.

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E. Area Access

1. Level 1

- West - Class A door from 1-CB-L1-B.

2. Level 2

- West - Class A door from 1-CB-L2-E.

F. Sealed Penetrations

Seals meet or exceed fire barrier ratings.

G. Fire Dampers

Dampers meet or exceed fire barrier ratings.

H. Safe Shutdown Components

- Train B safe shutdown cables.

I. Safety-Related Equipment

No major equipment.

J. Nonsafety-Related Equipment

No major equipment.

K. Combustible Loading

1. Zone No. 176

- Fixed combustible quantities

- Cable insulation (equivalent hypalon value)	27,510 lb
- Charcoal	0 lb
- Cellulosic materials	0 lb
- Oil/grease	0 lb
- Plastics	0 lb
- Rubber goods	0 lb

- Heat release

- Fixed combustibles	220,077,150 Btu
- Transient combustibles	800,000 Btu

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- Combustible loading 436,516 Btu/ft²
- Fire severity (wood equivalent) 327 min

L. Evaluation of Safe Shutdown Capability

1. For a fire in this area, use safe shutdown Train A.
2. Special operational and design considerations:
None.

3. Spurious actuation considerations:

- a. Pressurizer PORVs PV-0455A and PV-0456A may open (PT-0456 circuit damage) and it may not be possible to close block valve HV-8000B due to a fire in this fire area.
- b. Main steam atmospheric dump valve PV-3010 may open due to a fire in this fire area.
- c. Main steam atmospheric dump valve PV-3020 may open due to a fire in this area.
- d. CVCS volume control tank outlet valve LV-0112C may close due to a fire in this area.
- e. CVCS Train A charging pump miniflow valve HV-8111A may close due to a fire in this fire area.
- f. Train A charging path containment isolation valve HV-8105 may close due to a fire in this area.
- g. Train B motor driven auxiliary feedwater pump 1-1302-P4-003 may start due to a fire in this fire area.
- h. The turbine driven auxiliary feedwater pump 1-1302-P4-001 may start due to fire damage to HV-5106 circuits in this fire area.
- i. Safety injection actuation may occur due to fire damage to solid state protection cabinet 1-1605-Q5-SPA 125-V-dc power feeder circuits in this fire area.

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- j. Reactor vessel head letdown path valves HV-8095B, HV-8096B, and HV-0442B may all open due to a fire in this fire area.

M. Fire Detection

The following type(s) of fire detectors are installed within the area:

- Zone 176
 - Ionization smoke detection.

N. Fire Suppression

1. Automatic

- Zone 176 preaction sprinkler system - Partial zone coverage.

2. Manual

Hose stations (with portable extinguishers) are conveniently located to each area. Any location can be reached with at least one effective water stream. Independent Seismic Category 1 dry standpipe system provides alternate source of water for post-SSE fire fighting.

O. Radioactive Materials

None.

P. Ventilation

Smoke can be removed using the normal ventilation system in a once-through only mode of operation. For areas isolated by fire dampers, smoke may be removed by portable fans using flexible tubes to direct the smoke to an area capable of being ventilated or directly to outside.

Q. Drainage

A flooding analysis has determined that drainage from the fire areas is adequate.

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R. Emergency Lighting

8-h rated battery fixture(s) provide safe ingress/egress of personnel.

S. Deviations and Justifications

Unrated exterior fire area boundary:

See Appendix 9B, Section C.5.a(1).