

J. **Barnie Beasley, Jr., P.E.**  
Vice President  
Vogtle Project

**Southern Nuclear  
Operating Company, Inc.**  
40 Inverness Center Parkway  
P.O. Box 1295  
Birmingham, Alabama 35201

Tel 205.992.7110  
Fax 205.992.0403



*Energy to Serve Your World™*

LCV-590-H

January 5, 2000

Docket No. 50-424  
50-425

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Ladies and Gentlemen:

**VOGTLE ELECTRIC GENERATING PLANT  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION ON THE  
INDIVIDUAL PLANT EXAMINATION OF EXTERNAL EVENTS**

In letter LCV-590-G, dated March 31, 1998, we indicated that vulnerabilities to Question 5 were being generically addressed by NEI and the Vogtle specific response, if required, would be provided following satisfactory resolution between the NRC and NEI. By letter dated June 15, 1999 the Nuclear Regulatory Commission reviewed and approved the industry's response to the generic request for additional information (RAI) for the fire analysis portion of the Individual Plant Examination of External Events (IPEEE). This response is documented in the May 1999 EPRI report entitled "Guidance for Development of Response to Generic Request for Additional Information on Fire IPEEE." Enclosed is Southern Nuclear Operating Company's response to Question 5.

Please contact this office if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "J. B. Beasley, Jr." with a stylized flourish at the end. Below the signature, the name "J. B. Beasley, Jr" is printed in a small, sans-serif font.

JBB/JPC

Enclosure 1: Response to Question 5 in Request for Additional Information on Vogtle Individual Plant Examination of External Events

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cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser  
Mr. M. Sheibani  
SNC Document Management

U. S. Nuclear Regulatory Commission  
Mr. L. A. Reyes, Regional Administrator  
Mr. Ramin R. Assa, Vogtle Project Manager, NRR  
Mr. J. Zeiler, Senior Resident Inspector, VEGP

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### **Response to Question 5 in Request for Additional Information (RAI) on Vogtle Individual Plant Examination of External Events (IPEEE)**

#### **Question 5:**

It is important that the human error probabilities (HEPs) used in the screening phase of the analysis properly reflect the potential effects of fire (e.g., smoke, heat, loss of lighting, and poor communication), even if these effects do not directly cause equipment damage in the scenarios being analyzed. If these effects are not treated, the HEPs may be optimistic and result in the improper screening of scenarios. Note that HEPs which are realistic with respect to an internal events analysis could be optimistic with respect to a fire risk analysis.

Please identify: a) the scenarios screened out from further analysis whose quantification involved one or more HEPs, b) the HEPs (descriptions and numerical values) for each of these scenarios, and c) how the effects (e.g., smoke, heat, loss of lighting, and poor communication) of the postulated fires on HEPs were treated.

#### **Response:**

The quantitative fire analysis performed in the Vogtle Individual Plant Examination of External Events (IPEEE) was conducted in two phases: quantitative screening of location fire scenarios and detailed fire scenario analysis. In the quantitative fire scenario screening analysis, no credit was taken for the fire fighting efforts. All equipment contained in the location(s) affected by fire was assumed to be damaged. Furthermore, no additional operator recovery actions other than those already considered in the internal events analysis were included. As such, human error probabilities were not used in the calculations of the fire scenario frequencies. They were, however, used in the calculations of the conditional core damage probabilities (CCDPs) for each of the fire scenarios evaluated. In addition to the conservative calculations of the fire-induced core damage frequency, the quantitative screening was performed using a conservative cut-off value of  $4.45E-07$  events per year.

The location fire scenarios screened out from further detailed analysis are provided in Table 4.1-3 of the Vogtle IPEEE submittal. Table 1 of this response also lists these fire scenarios that were screened in the IPEEE from detailed fire analysis for the Vogtle Electric Generating Plant. The screened fire scenarios are presented as the row headings of the table. Although these scenarios were screened from detailed analysis, the core damage frequencies estimated for these scenarios were added to the total fire-induced core damage frequency presented in Table 4.6-1 of the Vogtle IPEEE submittal.

It is noted that, since the control room fire scenarios were not screened from the detailed analysis, this response only addresses those fire scenarios initiated outside of the control

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room. As discussed earlier, only those operator actions modeled in the internal events analysis were considered in the calculations of CCDPs for fire scenarios in the screening phase. Most of these operator actions are performed in the main control room. For fires initiated outside of the control room, the main impact of fire on the performance of operator actions in the control room is primarily the stress level which, however, should not be significantly higher than other event scenarios with the same impact on plant equipment. As such, fire scenarios initiated outside of the control room do not significantly affect operator actions performed in the control room. Therefore, during the fire scenario screening phase, only operator actions performed outside of the control room were considered for such fire effects as heat, smoke, loss of lighting, etc., in the analysis of CCDPs.

Also included in Table 1 of this response are the list of the modeled operator actions performed outside of control room and the impact of each of the screened fire scenarios on these operator actions. The operator actions are listed as the column headings of these tables. In addition, the locations of the postulated fire events and the locations where these operator actions are performed are also provided in Table 1. Note that the operator actions shown in Table 1 include only those actions applicable to the fire initiating events listed.

Based on the information provided in Table 1, impact of the screened fire scenarios on the operator actions performed outside of the control room can be grouped into three categories: (1) insignificant, (2) the presence of heat and smoke in the location where the action is to be performed or to which the door needs to be opened, and (3) the presence of some degree of smoke in the area outside of the location where the action needs to be performed or to which the door should be opened. As shown in Table 1, a great majority of the cases (i.e., 114 out of 122 fire scenarios) belong to the first category of impact; i.e., insignificant. The location where the action needs to be performed and the access route to this location are separated from the area of effects of the fire.

The second category of impact includes the following cases:

- Manually control TDAFW in fire scenario 1-AFB-C-157A-L.
- Open door to room B61 in fire scenario 1-CB-LB-H-71-L.
- Open door to room B48 in fire scenario 1-CB-LB-O-56A-L.
- Open door to room B55 in fire scenario 1-CB-LB-Q-79B-L.
- Transfer 120V AC to the regulated transformer in room B55 during fire scenario 1-CB-LB-Q-79B-L

In each of the above cases, the fire itself is in the location where the operator action is to be performed or to which the door needs to be opened. The modeled operator actions in this category are performed for the purpose to either control/operate or protect the equipment in these locations. For example, opening doors to rooms B48, B55, and B61 is to prevent equipment (e.g., inverters) damage due to overheating following a loss of

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the room ventilation. Manual control of the TDAFW is to ensure a successful operation of the auxiliary feedwater supply to the steam generator by the TDAFW pump. During the screening phase, however, no credit is taken for any of the equipment in these fire locations in the CCDP calculations for the relevant fire scenarios. As such, the impact of heat, smoke, etc., on these operator actions in the fire scenarios is immaterial.

For the third category of impact, the following cases are involved:

- Open door to room B61 in fire scenario 1-CB-LB-D-70-L (initiated in room B62).
- Open door to room B48 in fire scenario 1-CB-LB-E-76-L (initiated in room B53).
- Open doors to rooms B47, B52, and B55 in fire scenarios 1-CB-LB-J-56B-L (initiated in room B44) and 1-CB-LB-K-77B-L (initiated in room B56).
- Open doors to rooms B47 and B52 in fire scenario 1-CB-LB-Q-79B-L (initiated in room B55).
- Transfer 120V AC to the regulated transformers in rooms B47, B52, and B55 during fire scenarios 1-CB-LB-J-56B-L (initiated in room B44) and 1-CB-LB-K-77B-L (initiated in room B56).
- Transfer 120V AC to the regulated transformers in rooms B47 and B52 during fire scenario 1-CB-LB-Q-79B-L (initiated in room B55).

In the above fire scenarios, the postulated fire events are not in the location or in the access route to the location where the operator actions must be performed. In addition, normally closed fire doors are provided to these fire locations (i.e., rooms B44, B53, B55, B56, and B62). Therefore, most of the fire effects can be contained in these fire locations. However, the Operations investigation and fire fighting efforts would require opening of these fire doors resulting in the spread of some smoke to outside of these rooms, which communicates to the areas or locations where the operator actions need to be performed. Nevertheless, due to the size of the fire doors, the large open space outside of the fire location, and the limited amount of cabling materials installed in these rooms, the extent of smoke present in the area or corridor outside of the locations where the operator actions are to be performed is expected to be limited.

There are only two types of actions involved in the above cases: opening equipment room doors and transfer of power supply. For the action of opening door, it is a very simple action that can be completed even with the presence of some smoke. As to the transfer of power supply, the action is actually performed in the rooms without the presence of a fire. These rooms are equipped with fire doors. Only some degree of smoke is present outside of these rooms. Once the operator enters these rooms, the subsequent action can be performed in an environment without the effects of a fire.

At the Vogtle plant, the fire brigade includes at least one person who has been trained as a senior reactor operator (SRO). During response to fire events, the fire brigade members are equipped with fire protection clothing, breathing apparatus, portable lighting, and such communication device as radio. Additional Operations and

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Maintenance backup personnel may also be available. If a local mitigation action needs to be performed near the fire location additional breathing apparatus, portable lighting, and communication equipment is available that can be used by the Operations personnel to complete the required actions even with the presence of some smoke.

Due to the above considerations, it was concluded that the fire scenarios considered do not prevent access to the area or significantly increase the failure probability for the performance of the local operator actions modeled. As such, the analysis of CCDPs in the Vogtle IPEEE for these fire scenarios used the same HEP values as those used for the internal events analysis in IPE (see Table 3.3.3-2 in the Vogtle Individual Plant Examination submittal for their numerical values). In the Vogtle IPE, most of these HEPs were analyzed with detailed evaluation of the subtasks involved considering event diagnosis, the actual actions to be performed, and the relevant environmental conditions.

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Table 1. Vogtle Screened Fire Scenarios and Impact of Fire on Operator Actions Performed Outside of Control Room							
Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-AB-L1-B-149-L	Switchgear Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-L2-A-141A-L	Train A Mechanical Filtration/Exchange Room, Purge Exhaust Unit Area, Enclosure Filter/Exhaust Unit Area	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-L2-A-172 -L	Train A Mechanical Filtration/Exchange Room, Purge Exhaust Unit Area, Enclosure Filter/Exhaust Unit Area	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-L2-E-148-L	Switchgear Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LA-B-52-L	Train B ACCW Heat Exchanger Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LA-B-55-L	Train B CCW Heat Exchanger Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LA-D-39D-L	Train A Piping Penetration Room, Heat Exchanger Room, Valve Gallery	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LA-E-45-L	Feedwater Penetration Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LB-A-31-L	Train B MCC Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LB-A-34-L	ACCW Pump Room	NSI	NSI	NSI	NSI	NSI	NSI

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Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-AB-LB-A-35-L	Seal Water Heat Exchanger Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LB-A-35-P	ACCW Pump Room & Seal Water Heat Exchanger Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LB-B-171-L	Train A Pipe Penetration Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LB-B-26B-L	Boron Injection Pump Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LC-A-16-L	Train B RHR Heat Exchanger Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LC-D-20-L	Train A CVCS Charging Pump Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-A-9-L	Train B RHR Pump Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-B-12-L	Laundry and Hot Shower Tank Room, Electric Boiler Room, Floor	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-B-142-P	Floor Drain Tank Room, Filter Area, Sump and Sump Pump Area, Waste Holdup Tank Room, Valve Gallery, Boron Recycle Holdup Tank Room, Waste Evaporator Feed Pump Room, Train B Electrical Equipment Room	NSI	NSI	NSI	NSI	NSI	NSI



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Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-AB-LD-B-24-P	Floor Drain Tank Room, Filter Area, Sump and Sump Pump Area, Waste Holdup Tank Room, Valve Gallery, Boron Recycle Holdup Tank Room, Waste Evaporator Feed Pump Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-B-40-L	Floor Drain Tank Room, Filter Area, Sump and Sump Pump Area, Waste Holdup Tank Room, Valve Gallery, Boron Recycle Holdup Tank Room, Waste Evaporator Feed Pump Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-B-47-P	Floor Drain Tank Room, Filter Area, Sump and Sump Pump Area, Waste Holdup Tank Room, Valve Gallery, Boron Recycle Holdup Tank Room, Waste Evaporator Feed Pump Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-D-10-L	Train A RHR Pump Room & Train A Pipe Chase	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-D-8-L	Train A RHR Pump Room & Train A Pipe Chase	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-14A-P	Vestibule	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-14B-L	Vestibule	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-14C-L	Vestibule	NSI	NSI	NSI	NSI	NSI	NSI

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Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-AB-LD-G-14D-L	Boric Acid Batching Tank Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-21-L	CVCS Positive Displacement Charging Pump Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-22-L	MCC Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-22-P	MCC Room, Vestibule, Boric Acid Batching Tank Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-3-L	Boric Acid Storage Tank Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-32-L	Train A Containment Spray Pump Room and Boric Acid Transfer Pump Room, Train A Pipe Penetration Room, SGB Heat Exchanger Room, Train A CCW Pumps Room, Train A ACCW and CCW Heat Exchanger Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-5-L	Train A Containment Spray Pump Room and Boric Acid Transfer Pump Room, Train A Pipe Penetration Room, SGB Heat Exchanger Room, Train A CCW Pumps Room, Train A ACCW and CCW Heat Exchanger Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-G-54-L	Train A CCW HX Room	NSI	NSI	NSI	NSI	NSI	NSI

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Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-AB-LD-H-2-L	Train A Switchgear Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-I-1-L	Train A Piping Room, Spray Additive Tank Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-I4-L	Train A Piping Room, Containment Spray Room and Electrical Chase, Spray Additive Tank Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AB-LD-J-6-L	Train A Boric Acid Transfer Pump Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AFB-B-156-L	Train A Auxiliary Feed Water Pump Room	NSI	NSI	NSI	NSI	NSI	NSI
1-AFB-C-157A-L	Train C Auxiliary Feed Water Pump Room	Heat and smoke; no credit taken for TDAFW	NSI	NSI	NSI	NSI	NSI
1-AFB-D-157B-L	Condensate Storage Tank Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-111-L	Radiochemical Laboratory	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-112-L	Low Level Laboratory	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-113-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-114-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI

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Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-CB-L1-B-115-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-116-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-117-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-118-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-119-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-124-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-183B-L	Drum Storage and First Aid Rooms, Corridors, Health Physics Storage, Technical Work Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-B-185-L	Level 1 Men's Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1-E-108-L	Normal Electrical Shaft	NSI	NSI	NSI	NSI	NSI	NSI

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Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-CB-L1- F-107-L	Train A Electrical Shaft	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1- G-110-L	Record Storage Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L1- TSC-603- P	Technical Support Center	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L2- E-122A-L	HVAC Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L2- E-122B-L	Inverter Charger Panel, Battery, Computer and Storage Rooms, Fire Protection Valve Room, and Lube Oil Analysis Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L2- E-123-L	Inverter Charger Panel, Battery, Computer and Storage Rooms, Fire Protection Valve Room, and Lube Oil Analysis Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L2- E-127-L	Inverter Charger Panel, Battery, Computer and Storage Rooms, Fire Protection Valve Room, and Lube Oil Analysis Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L2- E-131-L	Warehouse Storage	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L2- E-133A-L	Security Battery Room	NSI	NSI	NSI	NSI	NSI	NSI

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		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-CB-L2-E-182-L	Inverter Charger Panel, Battery, Computer and Storage Rooms, Fire Protection Valve Room, and Lube Oil Analysis Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L2-E-201-L	Inverter Charger Panel, Battery, Computer and Storage Rooms, Fire Protection Valve Room, and Lube Oil Analysis Room, etc.	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L3-A-179-L	Train B Electrical Equipment Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L3-B-180-L	Normal Electrical Shaft	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L3-C-178-L	Train A Electrical Shaft	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L3-H-135-L	Normal HVAC Equipment Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L3-K-136-L	Unit 2 Train B Filter Room, Chiller Room and Water Heater Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L3-L-137-L	Lobby and Corridor	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L3-M-125A-L	Train B Filter and Chiller Rooms	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-L4-A-170-L	HVAC Rooms	NSI	NSI	NSI	NSI	NSI	NSI

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Table 1. Vogtle Screened Fire Scenarios and Impact of Fire on Operator Actions Performed Outside of Control Room							
Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-CB-LA-A-101-L	Train A HVAC Room, Corridor	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-B-89-L	Train A Electrical Penetration Area	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-C-90-L	Switchgear and MCC Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-D-104-L	Main Steam Valve Area	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-D-99-L	Feed Water Valve Area	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-J-158-L	Motor Control Center Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-N-86-L	East, West, and North, South Corridors	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-O-174-L	Normal Electrical Shaft	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-Q-175-L	Normal Electrical Shaft	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-S-100-L	Train A HVAC Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-T-102-L	Penetration Area	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-T-87-L	13.8-kV Switchgear, Penetration Area	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LA-U-169-L	Lobby, Storage Room, HVAC Room, Corridor	NSI	NSI	NSI	NSI	NSI	NSI

ENCLOSURE 1

Table 1. Vogtle Screened Fire Scenarios and Impact of Fire on Operator Actions Performed Outside of Control Room

Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-CB-LB-A-143-L	Train A Corridor and Electrical Mezzanine, HVAC Room, Rod Control Equipment Room, Electrical Tunnel 1T4A	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-A-69-L	Rod Control Equipment Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-A-72-L	HVAC Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-D-144-L	Train B Corridor, MG Set Room, Penetration Area, HVAC Room, Penetration Room, Electrical Tunnel 1T4B	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-D-65-L	Train B Corridor, MG Set Room, Penetration Area, HVAC Room, Penetration Room, Electrical Tunnel 1T4B	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-D-66-L	Train B Corridor, MG Set Room, Penetration Area, HVAC Room, Penetration Room, Electrical Tunnel 1T4B	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-D-68-L	Train B Corridor, MG Set Room, Penetration Area, HVAC Room, Penetration Room, Electrical Tunnel 1T4B	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-D-70-L	Train B HVAC Room (B62)	NSI	NSI	NSI	Some smoke in the corridor outside of B61	NSI	NSI



ENCLOSURE 1

Table 1. Vogtle Screened Fire Scenarios and Impact of Fire on Operator Actions Performed Outside of Control Room

Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-CB-LB-E-76-L	Non-Train DC Room (B53)	NSI	Some smoke in the corridor outside of B48	NSI	Some smoke in the corridor outside of B48	NSI	NSI
1-CB-LB-F-74-L	Non-Train Switchgear Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-G-63-P	Train B Electrical Penetration Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-G-82-L	Train B Electrical Penetration Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-H-71-L	Train B Switchgear Room (B61)	NSI	NSI	NSI	Heat and smoke in B61; some smoke in the corridor outside of B61; no credit taken for equipment in B61	NSI	NSI
1-CB-LB-I-83-L	Non-Train Electrical Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LB-J-56B-L	Train D Channel 4 Switchgear/Battery Room (B44)	NSI	Some smoke in the open area outside of B47, B52, & B55	Some smoke in the open area outside of B47, B52, & B55	Some smoke in the open area outside of B47, B52, & B55	NSI	NSI
1-CB-LB-K-77B-L	Train C Channel 3 Switchgear/Battery Room (B56)	NSI	Some smoke in the open area outside of B47, B52, & B55	Some smoke in the open area outside of B47, B52, & B55	Some smoke in the open area outside of B47, B52, & B55	NSI	NSI
1-CB-LB-O-56A-L	Train D Channel 4 Switchgear/Battery Room (B48)	NSI	Heat and smoke in B48; some smoke in the corridor outside of B48; no credit taken for equipment in B48	NSI	Heat and smoke in B48; some smoke in the corridor outside of B48; no credit taken for equipment in B48	NSI	NSI

ENCLOSURE 1

Table 1. Vogtle Screened Fire Scenarios and Impact of Fire on Operator Actions Performed Outside of Control Room							
Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-CB-LB-Q-79B-L	Train B Channel 2 Switchgear/Battery Room (B55)	NSI	Heat and smoke in B55; no credit taken for equipment in B55; some smoke in the open area outside of B47 and B52	Heat and smoke in B55; no credit taken for equipment in B55; some smoke in the open area outside of B47 and B52	Heat and smoke in B55; no credit taken for equipment in B55; some smoke in the open area outside of B47 and B52	NSI	NSI
1-CB-LB-T-64-L	Train A MCC Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LC-A-126A-L	Train A Filter/Chiller Room	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LC-A-153-L	Partial Train A Electrical Tunnel, Train A Electrical Chase, Train A Mechanical Shaft, Train A Filter, Chiller Room Normal Electrical Shaft	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LC-B-138-L	Non-Train Switchgear, Normal HVAC, Lobby, Corridor	NSI	NSI	NSI	NSI	NSI	NSI
1-CB-LC-B-58-L	Non-Train Switchgear, Normal HVAC, Lobby, Corridor	NSI	NSI	NSI	NSI	NSI	NSI
1-DB-L1-A-161-L	Diesel Generator Building	NSI	NSI	NSI	NSI	NSI	NSI
1-DB-L1-B-162-L	Train B Diesel Generator, Intake Filter, Fan Room, Air Plenum Room, Exhaust Silencer Room, Duct Penetration Room	NSI	NSI	NSI	NSI	NSI	NSI
1-DB-L1-C-163-L	Train A Fuel Oil Day Tank Room	NSI	NSI	NSI	NSI	NSI	NSI

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Table 1. Vogtle Screened Fire Scenarios and Impact of Fire on Operator Actions Performed Outside of Control Room

Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)
1-DB-L1- D-164-L	Train B Fuel Oil Day Tank Room	NSI	NSI	NSI	NSI	NSI	NSI
1-DPB-A- 165-L	Diesel Pumphouse	NSI	NSI	NSI	NSI	NSI	NSI
1-DPB-A- 165-P	Diesel Pumphouse, Diesel Pump Room, Valve Room	NSI	NSI	NSI	NSI	NSI	NSI
1-DPB-B- 166-L	Diesel Pump Room, Valve Room	NSI	NSI	NSI	NSI	NSI	NSI
1-DPB-B- 166-P	Diesel Pumphouse, Diesel Pump Room, Valve Room	NSI	NSI	NSI	NSI	NSI	NSI
1-EB-B- 141B-L	Filter Exhaust Unit Area, Valve Room	NSI	NSI	NSI	NSI		
1-NSP- LA-A- 145-L	Train A NSCW Pumphouse, Cooling Tower, Tunnels 1T2A, 1T3A, and 1T5A	NSI	NSI	NSI	NSI	NSI	NSI
1-NSP- LA-B- 146-L	Train B NSCW Pumphouse, Cooling Tower, Refueling Water Storage Tank, Reactor Make-up Water Storage Tank, Tunnels 1T2B, 1T5B	NSI	NSI	NSI	NSI	NSI	NSI
1-NSP- LA-B- 188-L	Train B NSCW Pumphouse, Cooling Tower, Refueling Water Storage Tank, Reactor Make-up Water Storage Tank, Tunnels 1T2B, 1T5B	NSI	NSI	NSI	NSI	NSI	NSI

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Table 1. Vogtle Screened Fire Scenarios and Impact of Fire on Operator Actions Performed Outside of Control Room

Fire Scenario	Description of Fire Location	OFC1/OFC2 Manually control TDAFW pump (Train C)	CBHV-BOPD/ CBHV-LOPD Open inverter room doors on loss of all AC (SBO)	RIAHXB Transfer 120V AC to regulated transformers (loss of power supply to panels 1AY1A & 1BY1B)	CBHV-OPD Open inverter room doors on loss of control building ESF electrical HVAC	M-MFW Locally open MFW isolation & regulating valves (loss of AFW)	M-ARV Locally open atmospheric relief valves (support/signal failure)
		AFB 2-PICD-5180B, 2PV-15129	CB Rooms B47, B48, B52, & B55	CB Rooms B47, B52, & B55	CB Rooms B47, B48, B52, B55, B61, B76, & AB Room 207	CB MSIV area (above steam tunnel)	CB MSIV area; AB rooms 116 & 118 (breaker locations)

Legends:

- AB- Auxiliary Building
- AFB- Auxiliary Feedwater Pumphouse
- CB- Control Building
- DB- Diesel Generator Building
- DPB- Diesel Pumphouse
- EB- Equipment Building
- NSP- NSCW Pumphouse
- NSI- No Significant Impact

Notes:

1. Impact of fire on operator actions performed outside of control room includes impact on the access route from control room to the location where the operator action is performed.
2. AFB TDAFW pump (train C) room and CB MSIV area can be accessed from outside area.
3. To locally open atmospheric relief valves, breakers must first be opened in Auxiliary Building rooms 116 (train A) and 118 (train B).