Attachment 1

Part 1: Fire Protection SDP Phase 1 Worksheet

Facility: _____

Performance Issue:_____

_____

_____

_____

_____

Step 1.1

Assign a finding category:

- O Cold Shutdown
- O Fire Prevention and Administrative Controls
- O Fixed Fire Protection Systems
- O Fire Confinement
- O Localized Cable or Component Protection
- O Post-fire SSD

Basis for selection/comments:

_____

_____

_____

_____

Step 1.2

Assign a degradation rating:

- O Low
- O Moderate
- O Moderate A (applies only to Fire Confinement and Localized Cable or Component Protection Issues)
- O Moderate B (applies only to Fire Confinement and Localized Cable or Component Protection Issues)
- O High

Basis for selection/comments:

_____

_____

_____

_____

Step 1.3

Task 1.3.1: Qualitative Screening for All Finding Categories

Question 1: Was the finding assigned a Low degradation rating?
- O Yes – Screens to Green, no further analysis required
- O No – Continue to next question

Question 2: Does the finding only affect ability to reach and maintain cold shutdown conditions?
- O Yes - Screen to Green, no further analysis required
- O No – Continue to Step 1.4, unless the finding category was "Fire Confinement," in which case, proceed to Task 1.3.2

Task 1.3.2: Supplemental Screening for Fire Confinement Findings

If the finding category assigned in Step 1.1 is "Fire Confinement" and the degradation rating assigned in Step 1.2 is "Moderate," perform a supplemental qualitative screening check based on the following questions. Otherwise, proceed to Step 1.4.

Question 1: Will the barrier in its degraded condition provide a 2-hour or greater fire endurance rating?
- O Yes – Screens to Green, no further analysis required
- O No – Continue to next question

Question 2: Is there a non-degraded automatic gaseous room-flooding fire suppression system in the exposing fire area?
- O Yes – Screen to Green, no further analysis required
- O No – Continue to next question

Question 3: Is there a non-degraded or no more than moderately degraded automatic full area water-based fire suppression system in the exposing fire area?
- O Yes – Screen to Green, no further analysis required
- O No – Continue to next question

Question 4: Can it be determined that the exposed fire area contain no potential damage targets that are unique from those in the exposing fire area (damage targets may include post-fire safe shutdown components or other plant components whose loss might lead to a demand for safe shutdown (e.g., a plant trip))?
- O Yes – Screen to Green, no further analysis required
- O No – Continue to next question

Question 5: Are all potential damage targets in the exposed fire area (as described in question 4) provided with passive fire barrier protection with no more than a moderate degradation that will provide a minimum of 20 minutes fire endurance?

O Yes – Screen to Green, no further analysis required
O No – Continue to next question

Question 6: Is a non-degraded or no more than moderately degraded partial-coverage automatic water based fire suppression system installed in the exposing fire area and are all the fixed or *in-situ* fire ignition sources included within the zone of coverage for this system?

O Yes – Screen to Green, no further analysis required
O No – Continue to next question

Question 7: Does the degraded barrier provide a minimum of 20 minutes fire endurance protection and are the fixed or *in situ* fire ignition sources and combustible or flammable materials positioned such that, even considering fire spread to secondary combustibles, the degraded barrier or barrier element will not be subject to direct flame impingement?

O Yes – Screen to Green, no further analysis required
O No – Continue to Step 1.4

Step 1.4 - Initial Quantitative Screening

Task 1.4.1: Assign a duration factor (DF)

O < 3 Days (0.01)
O 3 – 30 Days (0.10)
O > 30 Days (1.00)

Task 1.4.2: Estimate the fire frequency for the fire area (from Generic Fire Area Fire Frequency Table)

AREA	F_{AREA}
$(\Sigma F_{AREA}) =$	

Task 1.4.3: Screening Check

$$\Delta CDF_{1.4} \approx (\Sigma F_{AREA}) \times DF = _____$$

Table A1.1 - Phase 1 Quantitative Screening Criteria		
Assigned Finding Category (from Step 1.1):	**$\Delta CDF_{1.4}$ Screening Criteria**	
	Moderate Degradation	**High Degradation**
Fire Prevention and Administrative Controls	N/A	1E-6
Fixed Fire Protection Systems	1E-5	
Fire Confinement	1E-5	
Localized Cable or Component Protection	1E-5	
Post-fire SSD	1E-6	

O Δ $CDF_{1.4}$ is lower than the corresponding value in Table A1.1 - the finding screens to Green and the analysis is complete (no Phase 2 analysis is required)

O Δ $CDF_{1.4}$ is greater than or equal to the corresponding value in Table A1.1 - the finding does not screen to Green, and the analysis continues to Phase 2

Part 2: Fire Protection SDP Phase 2 Worksheet

Facility: _____

Results from FP SDP Phase 1 Review: $\Delta CDF_{1.4} \approx (\Sigma F_{AREA})$ x DF = _____

Request and review the following licensee documents:

- The fire hazards analysis for the fire areas to be evaluated
- The post-fire safe shutdown analysis for the fire areas to be evaluated
- The licensee's lists of required and associated circuits
- Post-fire operating procedures applicable to the fire areas to be assessed
- Documentation for any USNRC approved deviations or exemptions relevant to the fire areas to be assessed.

Step 2.1 - Independent SSD Path First Screening Assessment

Task 2.1.1: Identify the Designated Post-fire SSD Path

The identified SSD path must meet the following criteria in order to be considered at this stage of the Phase 2 analysis:

- The SSD path must be identified as the designated post-fire SSD path in the plant's fire protection program.
- The SSD path must be supported by a documented post-fire SSD analysis consistent with regulatory requirements.
- Use of the SSD path must be documented and included in the plant operating procedures.

SSD Path: _____

Task 2.1.2: Assess the Unavailability Factor for the Identified SSD Path

$CCDP_{2.1.2}$ = (SSD Unavailability Factor) = _____ (Credited as either 1.0, 0.1, or 0.01)

Basis for selection/comments:

_____

_____

_____

If $CCDP_{2.1.2}$ = 1.0, proceed to Step 2.2.

Task 2.1.3: Assess Independence of the Identified SSD Path
Criteria satisfied: $CCDP_{2.1.3} = CCDP_{2.1.2}$ = (SSD Unavailability Factor)
Criteria not satisfied: $CCDP_{2.1.3}$ = 1.0. Proceed to Step 2.2

Basis for criteria not met/comments:

_____

_____

_____

Task 2.1.4: Screening Check

$\Delta CDF_{2.1} \approx DF \times (\Sigma F_{Area}) \times CCDP_{2.1.2}$ = _____

Table A1.2 - Phase 2 Screening Step 1 Quantitative Screening Criteria		
Assigned Finding Category (from Step 1.1):	**$\Delta CDF_{2.1}$ Screening Value**	
	Moderate Degradation	**High Degradation**
Fire Prevention and Administrative Controls	N/A	1E-6
Fixed Fire Protection Systems	1E-5	
Fire Confinement	1E-5	
Localized Cable or Component Protection	1E-5	
Post-fire SSD	1E-6	

O $\Delta CDF_{2.1}$ is lower than the corresponding value in Table A1.2 - the finding screens to Green and the analysis is complete.

O $\Delta CDF_{2.1}$ is greater than or equal to the corresponding value in Table A1.2. The analysis continues to Step 2.2

Step 2.2 - Fire Damage State Determination

Task 2.2.1: Initial FDS Assignment

(Check all that apply from Appendix F, Table 2.2.1)

O FDS1
O FDS2
O FDS3

Basis for selection(s)/FDS3 assessment/comments:_____

_____

_____

_____

Task 2.2.2: Screening Assessment for FDS3 Scenarios

If the finding category assigned in Step 1.1 is "Fire Confinement," retain the FDS3 scenarios and continue the analysis with Step 2.3. For all other finding categories, conduct a screening check for the FDS3 scenarios based on the following questions:

Question 1: Does the fire barrier separating the exposed and the exposing fire areas have a non-degraded 2-hour or greater fire endurance rating?

- O Yes – FDS3 scenarios screen out, continue to Step 2.3.
- O No – Continue to next question

Question 2: Is there a non-degraded automatic gaseous room-flooding fire suppression system either in the exposed or in the exposing fire area?

- O Yes – FDS3 scenarios screen out, continue to Step 2.3.
- O No – Continue to next question

Question 3: Is there a non-degraded or no more than moderately degraded automatic full area water-based fire suppression system either in the exposed or in the exposing fire area?

- O Yes – FDS3 scenarios screen out, continue to Step 2.3.
- O No – Continue to next question

Question 4: Can it be determined that the exposed fire area contain no potential damage targets that are unique from those in the exposing fire area (damage targets may include post-fire safe shutdown components or other plant components whose loss might lead to a demand for safe shutdown (e.g., a plant trip))?

- O Yes – FDS3 scenarios screen out, continue to Step 2.3.
- O No – Continue to next question

Question 5: If the exposed fire area does contain post-fire safe shutdown components or components whose fire-induced failure might lead to a demand for safe shutdown, are all such components located at least 20 feet from the intervening fire barrier, and/or provided with passive fire protection with a minimum one-hour fire endurance rating?

- O Yes – FDS3 scenarios screen out, continue to Step 2.3.
- O No – Continue to next question

Question 6: Is a partial-coverage automatic water based fire suppression system installed in the exposing fire area and are all the fixed or *in-situ* fire ignition sources included within the zone of coverage for this system?

- O Yes – FDS3 scenarios screen out, continue to Step 2.3.
- O No – Continue to next question

Question 7: Does the fire barrier provide a minimum of 20 minutes fire endurance protection and are the fixed or *in situ* fire ignition sources and combustible or flammable materials in the exposing fire area positioned such that, even considering fire spread to secondary combustibles, the barrier will not be subject to direct flame impingement?

- O Yes – FDS3 scenarios screen out, continue to Step 2.3.
- O No – Retain the FDS3 scenarios and continue the analysis with Step 2.3.

Step 2.3 - Fire Scenario Identification and Ignition Source Screening

Task 2.3.1: Identify and Count Fire Ignition Sources

(Use the worksheet on the following pages)

Table A1.3 - Fire Frequency Evaluation Worksheet						
Nuclear Power Plant:						
Description of the Plant Area of Interest:						
Identifier/Designator of the Plant Area:						
Ignition Source Bin		**# of Items or**	**Individual Base Fire**	**Associated Frequency**	**Comments**	**Associated HHRs**
Cables - Non-Qualified (Low/Medium/High) (See Attachment 4)			1.6E-05/4.8E-04/ 1.4E-03			Initial 70kW See Attachments 3 and 5
Electrical Cabinets:						
Switchgear Cabinets	Thermal		5.5E-05			70kW, 200kW
	High Energy		4.7E-06			See Attachment 5
General Electrical Cabinets			6.0E-05			70kW, 200kW
General Control Cabinets			6.0E-05			200kW, 650kW
MCR and MCR Service Cabinets			4.8E-03			200kW, 650kW
Electric Motors:						
Electric Motors (<100HP)			6.5E-04			70kW, 200kW
Electric Motors (≥100HP)			6.5E-04			200kW, 650kW
Generators - General:						
Diesel Generators			5.6E-03			70kW, 200kW
Gas Turbine Generators			3.2E-04			70kW, 200kW
Reactor Protection System MG Sets			6.7E-04			70kW, 200kW

Ignition Source Bin		# of Items or	Individual Base Fire	Associated Frequency	Comments	Associated HHRs
Hydrogen Sources:						
Hydrogen Recombiner (BWR)			5.5E-03			See Attachment 5
Hydrogen Storage Tanks (Yes / No)			6.5E-04			See Attachment 5
Hydrogen Piping - Charged (Yes / No)			9.7E-04			See Attachment 5
Hot Work (Low/Medium/High) (See Attachment 4)			2.3E-05/6.9E-05/ 6.9E-04			See Attachment 5
Main Turbine- Generator Set:						
T/G Exciter Fire (Yes / No)			1.4E-03			70kW, 200kW
T/G Oil Fires (Yes / No)			1.7E-03			See Attachment 5
T/G Hygrogen Fire (Yes / No)			1.4E-03			See Attachment 5
Miscellaneous Components:						
Air Compressors (<100HP)	Motor Fire		1.5E-04			70kW, 200kW
	Oil Fire		1.0E-04			See Attachment 5
Air Compressors (≥100HP)	Motor Fire		1.5E-04			200kW, 650kW
	Oil Fire		1.0E-04			See Attachment 5
Battery Banks			1.9E-04			70kW, 200kW
Boiler Heating Units			9.7E-04			See Attachment 5
Electric Dryers			5.4E-04			70kW, 200kW
Ventilation Subsystems			6.0E-05			70kW, 200kW

Ignition Source Bin		# of Items or	Individual Base Fire	Associated Frequency	Comments	Associated HHRs
Pumps:						
Reactor Coolant Pump (PWR)	Motor Fire		6.2E-04			200kW, 600kW
	Oil Fire		3.1E-04			See Attachment 5
Reactor Feed Pump (BWR)	Motor Fire		8.4E-05			200kW, 650kW
	Oil Fire		8.4E-04			See Attachment 5
Main Feedwater Pumps	Motor Fire		2.7E-04			200kW, 650kW
	Oil Fire		2.7E-03			See Attachment 5
Other Pumps (<100HP)	Motor Fire		5.0E-05			70kW, 200kW
	Oil Fire		5.0E-05			See Attachment 5
Other Pumps (≥100HP)	Motor Fire		5.0E-05			200kW, 650kW
	Oil Fire		5.0E-05			See Attachment 5
Transformers:						
Transformers - Outdoor/Yard			4.2E-03			650kW, 10MW
Transformers - Indoor Dry			1.1E-04			70kW, 200kW
Transformers - Indoor Oil-Filled			1.1E-04			650kW, 2MW
Transients (Low/Medium/High) (See Attachment 4)			5.5E-05/1.7E-04/ 1.7E-03			70kW, 200kW or See Attachment 5

Task 2.3.2: Characterize Fire Ignition Sources and
Task 2.3.3: Identify Nearest and Most Vulnerable Ignition or Damage Targets
Task 2.3.4: Fire Ignition Source Screening (Using NUREG-1805 or Zone of Influence Chart)

Table A1.4

Source #	Source - Description/Location	Number of Sources	From Table A1.3 Expected HRR / High Confidence HRR	Severity Factor (SF_i)	Identify Nearest Target	Target Distance (ft) H	Target Distance (ft) R	Critical Distance (ft) (from Tables 2.3.2 thru 2.3.4) H	Critical Distance (ft) (from Tables 2.3.2 thru 2.3.4) R	Number of Sources Retained (i.e., Did not screen out)

Fire Area Dimensions: Width(ft) _____
Depth (ft) _____
Height (ft) _____

Highest HRR for sources not retained: _____kW
Does this HRR result in damaging hot gas layer?
• • Yes • • No If yes, retain scenario.

(Attach printouts of any spreadsheet calculations utilized from NUREG-1805.)

Task 2.3.5: Finding Screening Check

- O All identified fire ignition sources screened out in Task 2.3.4. The Phase 2 analysis is complete and the finding should be assigned a Green significance determination rating. Subsequent analysis tasks and steps need not be completed.

- O One or more of the fire ignition sources is retained, even if only at the higher severity value. The analysis continues to Step 2.4.

Step 2.4 - Fire Frequency for Unscreened Fire Sources

Task 2.4.1: Nominal Fire Frequency Estimation
Task 2.4.2: Findings Quantified Based on Increase in Fire Frequency and
Task 2.4.3: Credit for Compensatory Measures that Reduce Fire Frequency

(Use the worksheet on the following page)

Table A1.5 - Step 2.4: Fire Frequency for Unscreened Fire Sources							
Source #	Unscreened Fire Source at Specified HRR Value	Number of Sources Retained (Table A1.4)	Individual Base Fire Frequency (Table A1.3)	Severity Factor (SF_i) (Table A1.4)	Adjustment Factor for Fire Frequency Increase or Compensatory Measures* ($AF_{i\,2.4}$)	Base Frequency Increase **	Revised Fire Frequency for Unscreened Source
Total ($\Sigma F_{Source\,i}$ X SF_i X $\Pi AF_{i\,2.4}$):							

* Adjustment Factor for Fire Frequency Increase applies only to "Fire Prevention and Administrative Controls" findings (see discussion under Task 2.4.2). Credit for Compensatory Measures applies only to transient or hot work sources (see discussion under Task 2.4.3).

** Base frequency increases apply only to "Fire Prevention and Administrative Controls" findings within the combustible controls programs (see discussion under Task 2.4.2).

Assumptions/Comments/Remarks:_____

_____

_____

$\Delta CDF_{2.4} \approx (\Sigma F_{Source\,i} \text{ X } SF_i \text{ X } \Pi AF_{i\,2.4}) \text{ X } DF \text{ X } CCDP_{2.1.2}$ or $CCDP_{2.1.3}$

$\approx$ _____

Task 2.4.4: Finding Screening Check

Compare the updated change in CDF value, given the newly calculated fire frequency reflecting only the unscreened fire sources, with the values in the table below.

Table A1.6 - Phase 2, Screening Step 4 Quantitative Screening Criteria		
Assigned Finding Category (from Step 1.1):	**$\Delta CDF_{2.4}$ screening value**	
	Moderate Degradation	**High Degradation**
Fire Prevention and Administrative Controls	N/A	1E-6
Fixed Fire Protection Systems	1E-5	
Fire Confinement	1E-5[1]	
Localized Cable or Component Protection	1E-5[1]	
Post-fire SSD	1E-6	

[1] This entry applies to both 'Moderate A' and 'Moderate B' findings against a fire barrier.

O Δ $CDF_{2.4}$ is lower than the corresponding value in Table A1.6 - the finding screens to Green and the analysis is complete.

O Δ $CDF_{2.4}$ is greater than or equal to the corresponding value in Table A1.6. The analysis continues to Step 2.5

Step 2.5 - Definition of Specific Fire Scenarios and Independent SSD Path Second Screening Assessment:

Task 2.5.1: Identify Specific Fire Growth and Damage Scenarios (Fixed Ignition Sources)
Task 2.5.2: Identify Specific Fire Growth and Damage Scenarios (Self-ignited Cable Fire, Transients. Hot Work)
Task 2.5.3: Identify Specific Plant Damage State Scenarios and
Task 2.5.4: Assess Fire Scenario-Specific SSD Path Independence

(Use the worksheet on the following page)

Table A1.7

Source #	Unscreened Fire Source at Specified HRR Value	FDS State (carried forward unscreened from Table 2.2.1)	Plant Damage State Scenarios	Scenario-Specific SSD Path Independence (Yes / No)	Worst Case FDS (√)	Revised Fire Frequency for Unscreened Fire Sources (from Table A1.5)	Weighting Factor* (Attachment 5)	CCDPi (from task 2.1.2 or 2.1.3)	Revised Fire Frequency x $CCDP_i$
Total ($\Sigma F_{Source\ i}$ X SF_i X $\Pi AF_{i\ 2.4}$ X $CCDP_{i\ 2.1.2\ or\ 2.1.3}$):									

* Weighting factors apply only to transient and hot work sources (see Attachment 5).

Attach printouts of any spreadsheet calculations utilized from NUREG-1805.

Assumptions/Comments/Remarks:_____

_____

_____

$$\Delta CDF_{2.5} \approx (\Sigma F_{Source\ i} \times SF_i \times \Pi AF_{i\ 2.4} \times CCDP_{i\ 2.1.2\ or\ 2.1.3}) \times DF$$

$$\approx _____$$

Task 2.5.5: Screening Check

If the SSD path cannot be credited for any of the identified fire ignition sources given its worst-case damage state, then Step 2.5.5 is complete, and the analysis continues with Step 2.6.

If the SSD path can be credited for at least one fire ignition source, then the screening check is performed based on the values and criteria provided in the table below:

Table A1.8 - Phase 2, Screening Step 5 Quantitative Screening Criteria

Assigned Finding Category (from Step 1.1):	**$\Delta CDF_{2.5}$ screening value**	
	Moderate Degradation	**High Degradation**
Fire Prevention and Administrative Controls	N/A	1E-6
Fixed Fire Protection Systems	1E-5	
Fire Confinement	1E-5[1]	
Localized Cable or Component Protection	1E-5[1]	
Post-fire SSD	1E-6	

[1] This entry applies to both 'Moderate A' and 'Moderate B' findings against a fire barrier.

- O The value of $\Delta CDF_{2.5}$ is lower than the corresponding value in Table A1.8. The finding Screens to Green, and the analysis is complete.
- O The value of $\Delta CDF_{2.5}$ exceeds the corresponding value in Table A1.8. The analysis continues to Step 2.6.

Step 2.6 -
Fire Growth and Damage Time Analysis

and

Step 2.7 -
Non-Suppression Probability Analysis

Attach printouts of any spreadsheet calculations utilized from NUREG-1805.

Table A1.9

(All times in nearest whole minute - damage times rounded down, detection/suppression and manual response times up)

Source #	Unscreened Fire Damage State Scenarios	Time to Damage (Attachment 7)	Detection Time (Attachment 8)	(T_{Damage} - $T_{Detection}$)	Fixed Suppression Actuation Time (Attachment 8 and NUREG-1805)	(T_{Damage} - $T_{Suppression}$)

Assumptions/Comments/Remarks:_____

_____

_____

Task 2.7.4: Probability of Non-Suppression

Table A1.10

Source #	Unscreened Fire Damage State Scenarios	PNS_{fixed} (Table A8.2)	PNS_{manual} (Table 2.7.1)	$PNS_{scenario\ i}$ (Attachment 8)

Assumptions/Comments/Remarks:_____

_____

_____

Task 2.7.5: Screening Check

The estimated risk contribution or screening CDF, for each fire scenario is based on the product of the following factors:

Table A1.11

Source #	Unscreened Fire Damage State Scenarios	Revised Fire Frequency x $CCDP_i$ ($F_{Source\ i}$ X SF_i X $\Pi AF_{i\ 2.4}$ X $CCDP_{i\ 2.1.2\ or\ 2.1.3}$) (from Table A1.7)	PNS_i (from Table A1.10)	Revised Fire Frequency
Total ($\Sigma F_{Source\ i}$ x SF_i x $\Pi AF_{i\ 2.4}$ x $CCDP_{i\ 2.1.2\ or\ 2.1.3}$ x $PNS_{scenario\ i}$):				

$$\Delta CDF_{2.7} \approx DF \times (\Sigma F_{Source\ i} \times SF_i \times \Pi AF_{i\ 2.4} \times CCDP_{i\ 2.1.2\ or\ 2.1.3} \times PNS_{scenario\ i})$$

$\Delta CDF_{2.7} \approx$ _____

If $\Delta CDF_{2.7}$ is less than or equal to 1E-6, then the finding screens to Green, and the analysis is complete. If $\Delta CDF_{2.7}$ is greater than 1E-6, then the analysis continues to Step 2.8.

Step 2.8 - Plant Safe Shutdown Response Analysis

Using the appropriate plant initiating event worksheet(s) from the plant risk-informed inspection notebook, carry out the guidance provided under Step 2.8 of Appendix F, to account for the plant SSD response and required human recovery actions in order to quantify the factor "$CCDP_i$" for each fire growth and damage scenario of interest.

Attach any internal event worksheets and manual action evaluation table determinations used to quantify each $CCDP_i$.

(Use the worksheet on the following page)

Table A1.12 - Step 2.8: Plant Safe Shutdown Response Analysis							
Source #	Unscreened Fire Damage State Scenarios	HEP_i (from Table 2.8.1 or 2.8.2)	P_{SPi} (from Table 2.8.3)	CCDP (given successful manual action)	CCDP (given manual action fails and spurious actuation)	CCDP (given manual action fails and no spurious actuation)	$CCDP_i$

$CCDP_i$ = [(1-HEP_i) x CCDP(given successful manual action)] +
[HEP_i x P_{SPi} x CCDP(given manual action fails and spurious actuation)] +
[HEP_i x (1 - P_{SPi}) x CCDP(given manual action fails and no spurious actuation)]

where: HEP_i is the true value of the human error probability for scenario i (not the exponent value derived from the HEP tables), and
P_{SPi} is the probability of a spurious actuation for scenario I.

Step 2.9 - Quantification and Preliminary Significance Determination

Calculate a final quantification of the FDS scenarios of interest and assign a preliminary determination of a findings significance.

Table A1.13 - Step 2.9: Quantification of the FDS Scenarios					
Source #	Unscreened Fire Damage State Scenarios	Revised Fire Frequency for Unscreened Source (from Step 2.4) ($F_{Source\ i}$ x SF_i x $\Pi AF_{i\ 2.4}$) (from Table A1.5)	Probability of Non-Suppression (PNS_i) (Table A1.10)	CCDPi (Table A1.12)	Revised Fire Frequency for Unscreened Source
Total ($\Sigma F_{Source\ i}$ X SF_i X $\Pi AF_{i\ 2.4}$ X PNS_i X $CCDP_i$):					

Assumptions/Comments/Remarks:_____

_____

_____

The estimated risk contribution or screening CDF, for each fire scenario is based on the product of the following factors:

$$\Delta CDF_{2.8} \approx DF \times \sum_{i=1}^{n} [F_i \times SF_i \times \prod AF_{i\,2.4} \times PNS_i \times CCDP_i]_{\text{All Scenarios}}$$

$$\Delta CDF_{2.8} \approx _____$$

Where:

n	=	number of fire scenarios evaluated for a given finding (covering all relevant FDSs)
DF	=	Duration factor from Step 1.4
F_i	=	Fire frequency for the fire ignition source i from Task 2.4.1
SF_i	=	Severity factor for scenario i from Task 2.4.1
$AF_{i\,2.4}$	=	Ignition source specific frequency adjustment factors from Step 2.4
PNS_i	=	Probability of non-suppression for scenario i from Step 2.7
$CCDP_i$	=	Conditional core damage probability for scenario i from Step 2.8

If $\Delta CDF_{2.8}$ is less than or equal to 1E-6, then the finding screens to Green, and the analysis is complete. If $\Delta CDF_{2.8}$ is greater than 1E-6, then the finding is potential safety significant.

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