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805 TF FPWG FPRATF

Purpose of FAQ:

The purpose of this FAQ is to clarify the following for the NFPA 805 monitoring program:
• screening criteria
• action levels
• definition of fire compartments in the fire PRA

Is this Interpretation of guidance? Yes
Proposed new guidance not in NEI 04-02? Yes

Details:
NEI 04-02 guidance needing interpretation (include section, paragraph, and line numbers as applicable):

Some clarification is required to help the user implement the monitoring program for NFPA 805. The clarification stems from lessons learned while developing the monitoring program for the pilot plants.

There are three key points of clarification:

1. Analysis Unit - The monitoring analysis unit used to select ~~(fire compartment, fire area, fire zone, or ignition source) should be selected to optimize the monitoring scope such that~~ high-safety-significant NFPA 805 ~~program~~ fire protection (FP) SSCs ~~are identified and low safety significant FP SSCs~~ should be a fire area. Fire compartments smaller than fire areas may be used instead of fire areas provided the compartments are independent (i.e., share no FP SSCs). Independence is required ~~is required~~ in order to use the safety-significance selection process described later ~~can be monitored via existing programs/processes~~. Selections of nuclear safety capability equipment (NSCA) SSCs that are relied on to meet the nuclear safety performance criteria are done at the plant level using the fire PRA. The difference in selection scope arises because FP SSCs generally respond to fires within the local areas, whereas NSCA SSCs generally respond to fires in many different areas.

2. Screening – Screening can be used to identify the population of SSCs that need not be monitored. The screening of FP SSCs may ~~analysis units should generally~~ be based on multiple compartments up to and including fire areas. ~~larger analysis units, such that SSCs are not screened such that combined impacts would cause a larger analysis unit to be included in the scope.~~ The screening of NSCA SSCs may be based on maintenance rule guidelines used to identify high-safety-significant SSCs.

3. Action level threshold – When establishing the action level threshold for reliability and availability,

the action level should be consistent with~~at~~ or below any quantative estimate used in the fire PRA assumptions. When applicable, a sensitivity study should be performed to determine the margin below the action level that still provides acceptable fire PRA results to help prioritize corrective actions if the action level is reached.

Circumstances requiring guidance interpretation or new guidance:
Lessons learned.

Detail contentious points if licensee and NRC have not reached consensus on the facts and circumstances:
~~None.~~
There is not yet agreement on how high safety significant NSCA SSCs should be identified and on how the area should be chosen for selecting FP SSCs. The pilots RAI responses indicate that screening of NSCA SSCs was not performed, i.e., all NSCA SSCs were compared to Maintenance Rule SSCs and all differences dispositioned.

Potentially relevant existing FAQ numbers:
None.

Response Section:

Proposed resolution of FAQ and the basis for the proposal:
See specific revisions listed below.

If appropriate, provide proposed rewording of guidance for inclusion in the next Revision:
See revisions to NEI 04-02 Section 5.2.1, Section 5.2.3, and Appendix E below.

5.2 Monitoring

Section 2.6 of NFPA 805 discusses monitoring requirements associated with a risk-informed, performance-based fire protection program. The following are the requirements from Section 2.6:

*"**2-6* Monitoring.** A monitoring program shall be established to ensure that the availability and reliability of the fire protection systems and features are maintained and to assess the performance of the fire protection program in meeting the performance criteria. Monitoring shall ensure that the assumptions in the engineering analysis remain valid.*

***2-6.1 Availability, Reliability, and Performance Levels.** Acceptable levels of availability, reliability, and performance shall be established.*

***2-6.2 Monitoring Availability, Reliability, and Performance.** Methods to monitor availability, reliability, and performance shall be established. The methods shall consider the plant operating experience and industry operating experience.*

***2-6.3 Corrective Action.** If the established levels of availability, reliability, or performance are not met, appropriate corrective actions to return to the established levels shall be implemented. Monitoring shall be continued to ensure that the corrective actions are effective. "*

Section 2.3 of NFPA 805 provides additional requirements related to assumptions used in performing engineering analyses to support a risk-informed, performance-based fire protection program. The following requirements are included:

*"**2.3 Assumptions.** The following assumptions are provided to perform a deterministic analysis of ensuring the nuclear safety performance criteria are met. [Performance-based information (i.e., equipment out of service, equipment failure unrelated to the fire, concurrent design basis events) are integral parts of a PSA and shall be considered when performance-based approaches are utilized.]*
Section 2.4.2.1 of NFPA 805 discusses systems and equipment utilized to meet the nuclear safety performance criteria. One requirement cited for those systems and equipment relates to availability and reliability:

*"**2.4.2.1 Nuclear Safety Capability Systems and Equipment Selection**…Availability and reliability of equipment selected shall be evaluated."*

Section 2.4.3.3 of NFPA 805 discusses PSA analyses performed to support fire risk evaluations:

*"**2.4.3.3*** The PSA approach, methods, and data shall be acceptable to the AHJ. They shall be appropriate for the nature and scope of the change being evaluated, be based on the as-built and as-operated and maintained plant, and reflect the operating experience at the plant."*

As part of the transition review, the adequacy of the inspection and testing program to address FP systems and equipment within plant inspection and the compensatory measures programs should be reviewed. In addition, the adequacy of the plant corrective action program in determining the causes of equipment and programmatic failures and minimizing their recurrence should also be reviewed as part of the transition to a risk-informed, performance-based licensing basis.

5.2.1 Existing Guidance and Programs

The Maintenance Rule (10 CFR 50.65) and Regulatory Guide 1.174 are provided as examples in NFPA 805 Section A.2.6 of acceptable monitoring programs. However, the appendices of NFPA-805 are not part of the 50.48(c) rule and ~~the intent is not to require fire protection program equipment to be included into a maintenance rule program.~~ Fflexibility is provided to allow plant-specific processes to be established for performance monitoring.

NEI Document NUMARC 93-01, *Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants*, provides an acceptable approach to meet the Maintenance Rule. It includes methods for selecting equipment, establishing and applying risk significance criteria and performance criteria, goal setting and monitoring, assessing and managing risk, performing periodic assessment of performance, and necessary documentation. Although not required, NUMARC 93-01 should be consulted for ideas in developing/updating a ~~fire protection~~ monitoring program for FP and NSCA SSCs. Due to the efforts expended in complying with the maintenance rule for plant safety systems, a plant may determine that the incremental effort associated with adding selected NSCA SSCs and fire protection program systems and features to previously established programs may be less than establishing a new process or effort. NUMARC 93-01 is very flexible in recognizing the utilization of existing plant programs.

Plant/owner-operator specific initiatives have been undertaken to optimize fire protection surveillance and testing practices and frequencies for FP SSCs based upon performance in accordance with the guidance in EPRI Technical Report (TR) 1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features". This is allowed under traditional regulatory framework using a fire protection standard license condition and by ensuring that the program and its results were satisfactory to insurance representative. Therefore, there are established programs that could be used, enhanced, or modified in an effort to meet the monitoring requirements for FP SSCs as discussed in NFPA 805. If a licensee plans to continue to utilize this methodology post-transition, a discussion of its use should be included in the monitoring section of the LAR and NEI 04-02 Table B-1 Transition of Fundamental FP Program and Design sections of the LAR. Other entities such as the Department of Defense and Department of Energy have participated in performance-based fire protection inspection and testing efforts. Therefore, there are a number of resources available to establish and maintain a risk-informed, performance-based program.

Acceptable levels of availability, reliability, and performance must be established for both NSCA SSCs and FP SSCs. This does not imply or require detailed statistical analysis of all fire protection and NSCA systems, features, components, and sub-components. Instead, determining acceptable levels of availability, reliability, and performance should be commensurate with their risk significance and may be established at the structure, system, or component level, or aggregates of these, where appropriate. It is up to individual plants to establish goals and criteria for acceptable levels of availability and reliability. This is consistent with Maintenance Rule implementation as outlined in NUMARC 93-01.

5.2.2 Monitoring Program Development

It is expected that a monitoring program for a risk-informed, performance-based fire protection program would be established in phases, with elements added as more of the program relies upon risk-informed, performance-based techniques. For example, during the transition to a new licensing basis, a plant ~~limit~~may ~~only truly~~ employ ~~r~~ risk-informed, performance-based techniques to ~~to~~ only ~~fewaddress~~ a few fire areas or fire protection features/elements. It is important to identify parts of the program that may require additional attention during the transition and change evaluation process. Likely candidates would include monitoring of nuclear safety capability equipment or other plant equipment that is not part of the traditional 10 CFR 50, Appendix R post-fire safe shutdown analysis and whose availability is an important component of limiting fire risk. Other attributes may include features that are integral to successful fire modeling in an area, but may not have been considered important in a compliance-based approach.

Comment [S1]: Step wise post-transition implementation of risk-informed fire areas is a concept not yet explored.

Comment [S2]: Seems like all the FP SSCs in the risk informed areas need to be treated

It is expected that additional more refined monitoring program (availability, reliability, and performance goals) would be established for the parts of the program where these techniques have been employed. For example, as risk-informed, performance-based techniques are used as part of the change process (i.e., fire modeling in a fire area, change in equipment in PRA model, change in equipment relied upon to achieve the nuclear safety performance criteria, change in surveillance frequencies of fire protection equipment), the scope and depth of monitoring program would need to be adjusted accordingly. See Appendix E of this document for additional guidance on establishing a monitoring program.

5.2.3 Monitoring Considerations

Monitoring programs for fire protection systems and features are not a new concept being introduced as part of a risk-informed, performance-based fire protection program. Surveillance, testing, inspection, and maintenance testing of fire protection systems and features have always been part of a sound program. In addition, the system engineer functions at nuclear power plants have stressed system and equipment health, reliability, and availability.

Risk-informed, performance-based reactor oversight has also increased attention on plant systems and features (including fire protection) with the greatest contribution to risk. Adoption of a risk-informed fire protection licensing basis, however, may introduce some different considerations that may not have been present in a traditional fire protection program.

- Calculations and analyses such as fire modeling, particularly a maximum expected and limiting fire scenario, rely on core key assumptions that help form the basis for acceptability of configurations and changes to those configurations. These assumptions and input conditions may be different in content and form than previously analyzed.

For example, a fire scenario in a traditional program may have assessed fire hazards by monitoring the combustible loading represented by a BTU/square foot value in an area, which would be monitored by a plant combustible control program. Under a risk-informed, performance-based program, fire modeling, using more advanced and accurate predictions of fire behavior may rely on a certain quantity of oil spill from a pump motor or containment of spilled oil by a retaining berm. The factors that influence results of fire scenarios should be included within an administrative or design control/monitoring program.

- Suppression systems, relied upon specifically in a calculation for core damage frequency, ~~has~~ have an inherent reliability and availability that will have been used in the calculations. Systems that are integral to prevention of risk-significant fire scenarios may require monitoring to meet numerical availability numbers in order to satisfy risk acceptance criteria.
- Traditional safe shutdown analyses have relied upon safe shutdown equipment (e.g., NSCA SSCs) being in service at the start of a fire. A risk-informed, performance-based approach, particularly in a risk model that calculates core damage frequency, considers both NSCA SSCs~~safe shutdownnuclear safety capability equipment~~ and FP SSCs~~fire detection, suppression and mi♦igation featuresfire protection systems and features and equipment~~ reliability and unavailability. As more credit is taken for risk-informed, performance-based approaches, the need for monitoring this equipment reliability and availability, with direct consideration on fire risk, would be necessary.
- The majority of NSCA SSCs ~~equipment~~ relied upon to ensure post-fire nuclear safety performance criteria is met is ~~are~~ equipment that is ~~are~~ important for plant risk and mitigation of the consequences of design basis accidents. Therefore, most NSCA equipment important to fire risk ~~has have been~~will be subjected to inspection, testing, and performance monitoring as part of the ~~nuclear plant processes. In addition, equipment important to the IPE risk model risk hashave been identified as part of the~~ Maintenance Rule process and subjected to a variety of plant controls and processes. However, all NSCA equipment important to fire risk may not be part of an existing monitoring program. For example, an extended SBO with loss of RCP seal cooling may be the dominate fire risk contributor in a PWR but be an insignificant contributor to internal events risk. SSCs relied upon to recover from and/or mitigate an SBO and loss of seal cooling may, or may not, be safety significant for the Maintenance Rule. —Outliers must be identified and incorporated as necessary into a monitoring program.
- Most of the fire protection features and systems are already being included in the existing fire protection inspection and test program and system/program health programs. The existing program is adequate for routine monitoring of the fire protection systems and features required by the fundamental program of Chapter 3 of NFPA 805 or of low safety significance for Chapter 4 of NFPA 805. The process outlined in Appendix E of this document determines those high safety significant fire protection systems and features, nuclear safety capability equipment and programmatic elements that may require additional monitoring beyond normal inspection, testing and surveillance activities.
~~• Because a fire risk assessment may rely on different equipment than a traditional safe shutdown analysis, the availability of this equipment may be important to fire risk. For example, the availability of offsite power or non-safety feedwater sources may be an integral part of a risk model. The need for monitoring these features under the Maintenance Rule or the NFPA 805 monitoring program should be determined.~~
- Due to different success criteria that are evaluated in a risk-informed, performance-based program, other fire protection systems and features ~~and nuclear safety capability equipment~~ may require monitoring. For example, a fire barrier previously not credited for 10 CFR 50, Appendix R compliance may be important to preventing fire from causing a fire-induced loss of offsite power or plant trip, which may prove to be risk significant. Another example is a fire barrier installed prior to efforts for compliance with 10 CFR 50, Appendix R that was abandoned in place without any credit taken for fire protection. This barrier may prove valuable in protecting risk significant circuitry against a credible fire (as determined by fire modeling).
- To demonstrate compliance with NFPA 805, action levels should be established for the monitored SSCs, which may be grouped together functionally in 'pseudo-systems' or 'performance monitoring groups', based on the fire PRA assumptions. For example, if the fire PRA assumes 95% reliability for a wet pipe sprinkler system, the monitoring program action level for that group of SSCs comprising the wet pipe sprinkler system should be set at or above 95% since the requirement in NFPA 805 Section 2.6 is to "ensure that the assumptions in the engineering analysis remain valid." This means that corrective actions should be taken before the criterion is exceeded. Further evaluation such as a sensitivity study may be performed to determine the margin below the action level that still provides acceptable fire PRA results. This will help prioritize corrective actions once the action level is reached.

~~• Special attention is required when selecting the monitoring analysis units (i.e. plant area subdivision or compartment see example in Appendix E, Phase 2 – Screening Using Risk Criteria). Selecting too large of an analysis unit can expand the monitoring to unnecessarily include low risk significant fire SSCs, while selecting~~

Comment [S3]: Indefinite and undefined analysis units could yield indeterminate results and are not a good idea

~~too small of a unit can cause the program to screen equipment whose combined impacts may be significant. In general, the selection process should move from large to small such that the monitoring can be focused on the locations and the SSCs within them that provide significant contributions to the risk of the unscreened larger analysis units.~~

- Screening compartments and fire areas ~~and analysis unit selection processes~~ should also include considerations for design/operation/maintenance limitations. For instance, fire detection should not subdivide systems beyond the system/train/channel level used in normal operation/maintenance.

REPLACE ALL OF APPENDIX E WITH THE FOLLOWING:

E. MONITORING

The monitoring process consists of four major phases:

- Phase 1 – Scoping
- Phase 2 – Screening Using Risk Criteria
- Phase 3 – Risk Target Value Determination
- Phase 4 – Monitoring Implementation

A documented evaluation is used to:

- Determine the scope of fire protection, radioactive release, and nuclear safety capability SSCs and programmatic elements to monitor.
- Establish initial levels of availability, reliability, or other criteria for those elements that require monitoring.

A suggested methodology is outlined below:

Phase 1 – Scoping

In order to meet the NFPA 805 requirements for monitoring, the following categories of SSCs and programmatic elements should be included in the NFPA 805 monitoring program:

- Structures, Systems, and Components required to comply with NFPA 805, specifically:
  - Fire protection systems and features required by the Nuclear Safety Capability Assessment
  - Fire protection systems and features modeled in the fire PRA
  - Fire protection systems and features required by Chapter 3 of NFPA 805
  - Nuclear Safety Capability Assessment equipment
  - Structures, systems and components relied upon to meet radioactive release criteria
- Fire Protection Programmatic Elements
- Key Assumptions in Engineering Analyses (specifically analyses performed to demonstrate compliance with the nuclear safety and radioactive release performance criteria)

As a minimum the fire protection systems and features (required to meet Chapter 3 of NFPA 805~~ and the NSCA criteria~~) and SSCs required to meet the radioactive release criteria will be included in the existing inspection and test program and system/program health program. Note that SSCs required for meeting the radioactive release criteria that are not currently included in the existing inspection and test program and system/program health program should be added in order to assure that the radioactive release criteria can be met reliably. In addition passive features (barriers, drains, curbs, etc.) that are relied upon to demonstrate compliance with Chapter 4 of NFPA 805 will also be included in the existing inspection and test program and system/program health program. The existing programs are adequate for routine monitoring of these SSCs.

The following process is suggested to determine those fire protection systems and features and NSCA~~nuclear safety~~ equipment that may require additional monitoring beyond normal surveillance activities.

1. Fire Protection Systems and Features

Monitoring of FP SSCs that demonstrate compliance with NFPA 805 is required. These SSCs may include Detection and Alarm Systems, Fire Suppression Systems, Water Supply, Hydrants, and Valves, Fire Pumps, Stand Pipes, Hose Stations, and Hoses, or Fire Barriers, among others. Only those fire protection systems and features required to meet the Nuclear Safety Capability Assessment or modeled in the fire PRA would be considered in scope for the additional monitoring in the NFPA 805 program.

2. Nuclear Safety Equipment

Nuclear Safety Capability Assessment (NSCA) equipment may be already ~~is generally~~ monitored by the Maintenance Rule. It is anticipated that in most cases, for the NSCA equipment, the existing Maintenance Rule performance goals will be bounding and that additional NFPA 805 performance goals will not be required. A confirmatory review whereby the comprehensive list of NSCA equipment will be compared against the SSCs ~~will be performed to ensure that NSCA SSCs~~ that are monitored in the Maintenance Rule program and are therefore not expected to be included as part of NFPA 805 Monitoring will be performed. Any NSCA SSC that is not ~~include in~~ monitored by the Maintenance rule ~~monitoring~~ will be included in the NFPA 805 monitoring program or an auditable justification explaining why monitoring the SSC is unnecessary should be developed and retained. Any justification should conclude with an evaluation of the possible cumulative impact of the potential degradation of multiple, unmonitored SSCs.

Alternatively, the fire PRA can be used to identify high-safety-significant (HSS) NSCA SSCs that require monitoring. The maintenance rule guidelines differentiating HSS from low-safety-significant (LSS) SSCs may be used. All NSCA SSCs that are not HSS may be considered LSS and need not be included in the monitoring program NSCA (or HSS NSCA if screening is used) SSCs~~equipmen~~t not currently monitored in the Maintenance Rule will be evaluated for incorporation. If the maintenance rule process does not elect to include these SSCs into the Maintenance Rule program, they will be included in the NFPA 805 monitoring program.

3. Monitoring of Fire Protection Programmatic Elements

Monitoring of programmatic elements is required in order to "assess the performance of the fire protection program in meeting the performance criteria". Programmatic aspects include:
- Transient Combustible Control; Transient Exclusion Zones
- Hot Work Control; Administrative Controls
- Fire Watch Programs; Program compliance and effectiveness
- Fire Brigade; Response Times

Fire protection health reports, self-assessments, regulator and insurance company reports provide inputs to the monitoring program. The monitoring of programmatic elements and program effectiveness may be performed as part of the management of engineering programs. This monitoring is more qualitative in nature since the programs do not lend themselves to the numerical methods of reliability and availability. These programs form the bases for many of the analytical assumptions used to evaluate compliance with NFPA 805 requirements

4. Monitoring of Key Assumptions in Engineering Analyses

The assumptions of the fire PRA are the primary drivers of the need for additional monitoring reliability and availability of the SSCs utilized in the risk-informed, performance-based program. These SSCs are generally broken down into two groups, the NSCA equipment and the fire protection systems and features SSCs (addressed in items 1 and 2 above). Other analytical assumptions from the NSCA and Non-Power Operations Analysis may also increase the scope of SSCs or programmatic elements to be reviewed. ~~Only those~~ SSCs or

assumptions modeled in the fire PRA would be considered in scope for the additional monitoring in the NFPA 805 program. If risk-informed screenings consistent with the maintenance rule is used, only HSS SSCs need to be monitored against established criteria. Other assumptions will be included in the existing inspection and test program and system/program health program. The existing programs are adequate for routine monitoring of these assumptions.

Phase 2 – Screening Using Risk Criteria

Phase 2 of the process establishes the risk significance criteria and screens the SSCs and programmatic elements to determine risk significant SSCs and programmatic elements. This may be accomplished at the component, programmatic element, and/or functional level. Since risk is evaluated at the compartment level or fire area ~~analysis unit~~ level, criteria must be developed to determine those analysis units for which the FP SSCs contained within the area are considered risk significant. The fire PRA is the primary tool used to establish the risk significance criteria and performance bounding guidelines. The screening thresholds used to determine risk significant analysis units are those that meet the following example criteria:

Risk Achievement Worth (RAW) of the monitored parameter ≥ 2.0
(AND)[JDJ1] either
Core Damage Frequency (CDF) x (RAW) ≥ 1.0E-7 per year
(OR)
Large Early Release Frequency (LERF) x (RAW) ≥ 1.0E-8 per year

Where CDF, LERF, and RAW are calculated for each fire area. If compartments are used that are smaller than fire areas, the compartments must be independent in that they share no FP SSCs.

The monitoring program will include all fire protection program SSCs that are in fire compartments which exceed the screening criteria, and that are amenable to risk measurement. The licensee's expert panel may also include in the monitoring program additional fire protection program SSCs from fire compartments that are below the fire compartment screening criteria described above, based on plant-specific considerations.
~~High Safety Significant (HSS) fire protection systems and features and nuclear safety capability equipment are those that meet or exceed the risk significant screening criteria. The SSCs and programmatic elements for these HSS analysis units will be included in the additional monitoring program of NFPA 805. Low Safety Significant fire protection systems and features and nuclear safety capability equipment are those that do not meet the risk significant screening criteria and are monitored via existing programs/processes. Additionally, the review may include other analysis units (and required FP/NSCA SSCs and programmatic elements) that are not risk significant (per the screening criteria) but are included based on plant specific history and/or operational considerations.~~
~~The selection of an appropriately sized analysis unit is critical and a basis needs to be established to ensure adequate monitoring is provided.~~

EXAMPLE: For a plant, the power block definition included the Turbine building. The fire PRA treated the entire turbine building (four floors, open to the outside, approximately 52,800 square feet) as one fire area~~one analysis unit~~. Values for CDF and LERF are greater than the threshold, so this fire area~~analysis unit~~ is screened into the monitoring program.

The whole turbine building would contribute 350 detectors, 18 detector channels, 16 sprinkler valves, and ten manual pull stations into the scope of systems requiring additional monitoring. These FP SSCs are not credited in any other fire area.

There are four significant fire compartment ~~sources~~ identified (for CDF and LERF) for this fire area~~analysis unit~~. Two fire compartments ~~sources~~ are located in the General Service Switchgear Room on the south side of the 261' elevation, one fire compartment ~~source~~ is located on the northeast corner on the 261' elevation, and one compartment ~~fire source~~ is ~~in~~ the Electrical Room on the south side of the 286' elevation. The FP SSCs in each compartment only respond to fires within the compartment. When just the impact from the four compartments ~~sources within the analysis unit~~ is considered, the monitored equipment is 42 detectors, three detector channels, one sprinkler valve, and one manual pull station. These FP SSCs are not credited in any other fire compartments. This accounts for an almost 90% reduction in quantity of monitored equipment while still focusing on the important fire scenarios.

~~The more practical and realistic approach to this particular analysis unit would be to evaluate each of the four significant fire sources, determine exactly what equipment would mitigate the impact of the four significant fire sources, and to only include that equipment in the monitoring program (down to the system/train/channel level normally used for operation and maintenance).~~

A licensee may choose to develop a list of all NSCA SSCs that have been credited and compare that list with all SSCs (and functions) included in the Maintenance Rule to identify the population of NSCA SSCs that are not currently monitored. Justification should be provided for each SSC that is not included in a monitoring program. Alternatively, a licensee may use the screening criteria in NUMARC 93-01 to identify HSS SSCs that should be included in a monitoring program. All other NSCA SSCs would be LSS SSCs and need not be included in a monitoring program.

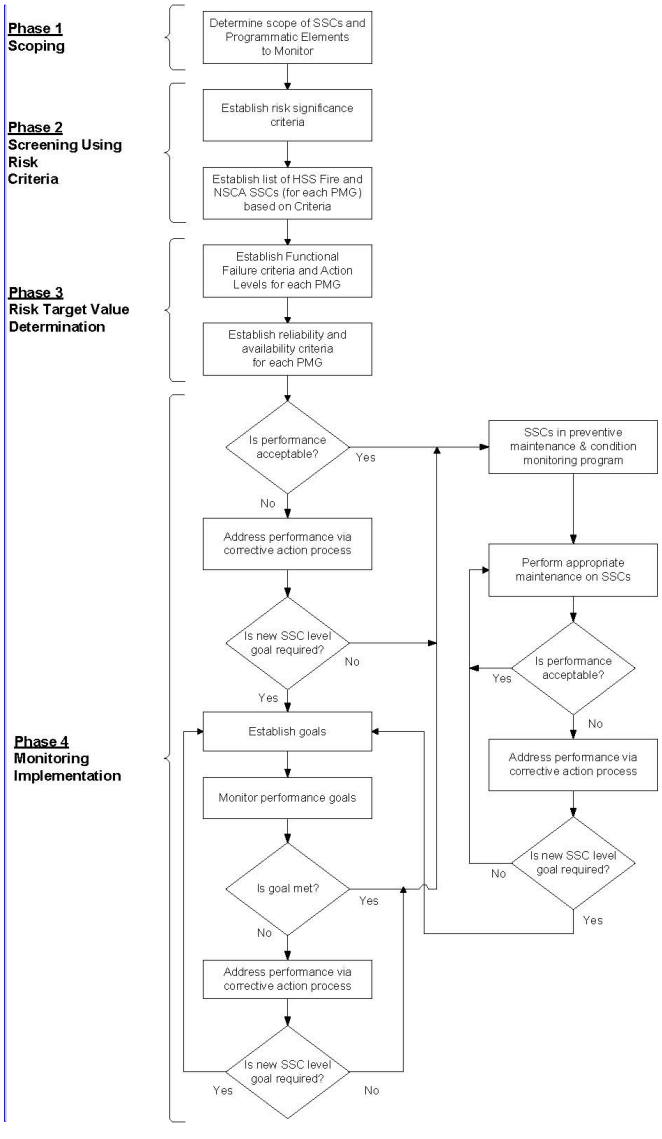
Phase 3 – Risk Target Value Determination

Phase 3 consists of using the fire PRA, or other processes as appropriate, to determine target values of reliability and availability for the High Safety Significant, FP/NSCA SSCs and programmatic elements established in Phase 2.

Failure criteria are established by an expert panel or evaluation based on the required fire protection and nuclear safety capability SSCs and programmatic elements assumed level of performance in the supporting analyses. Action levels are established for the SSCs at the component level, program level, or functionally through the use of the pseudo system or 'performance monitoring group' concept. Action level should be developed for all NSCA SSCs that are included in a monitoring program. If HSS SSCs have been identified using the maintenance rule guidelines, the associated SSC specific performance criteria may be established as in the maintenance rule. If HSS SSCs have not been identified, the SSC specific performance criteria should be established based on the potential impact of degraded performance on fire risk. If HSS SSCs have not been identified justification for not monitoring SSCs should include an evaluation of the potential risk target and explanation why such a target is unnecessary. The actual action level is determined based on the number of component, program or functional failures within a sufficiently bounding time period (~2-3 operating cycles). Adverse trends and unacceptable levels of availability, reliability, and performance will be reviewed against established action levels. Documentation of the Monitoring Program failure criteria and action level targets will be contained in a documented evaluation.

Phase 4 – Monitoring Implementation

Phase 4 is the implementation of the monitoring program, once the monitoring scope and criteria are established. Monitoring should consist of periodically gathering, trending, and evaluating information pertinent to the performance, and/or availability of the SSCs and comparing the results with the established goals and performance criteria to verify that the goals are being met. Results of monitoring activities should be analyzed in timely manner to assure that appropriate action is taken. The corrective action process will be used to address performance of fire protection and nuclear safety SSCs that do not meet performance criteria. For ~~High Safety Significant~~ FP and NSCA~~fire protection and nuclear safety~~ SSCs that are monitored, unacceptable levels of availability, reliability, and performance will be reviewed against the established action levels. If an action level is triggered, a non-conformance report will be initiated to identify the negative trend. A corrective action plan will then be developed using the appropriate licensee process. Once the plan has been implemented, improved performance should return the SSC back to below the established action level.
A periodic assessment should be performed (e.g., at a frequency of approximately every two to three operating cycles), taking into account, where practical, industry wide operating experience. This may be conducted as part of other established assessment activities. Issues that should be addressed include:
• Review systems with performance criteria. Do performance criteria still effectively monitor the functions of the system? Do the criteria still monitor the effectiveness of the fire protection and nuclear safety capability assessment systems?
• Have the supporting analyses been revised such that the performance criteria are no longer applicable or new fire protection and nuclear safety capability assessment SSCs, programmatic elements and/ or functions need to be in scope?
• Based on the performance during the assessment period, are there any trends in system performance that should be addressed that are not being addressed?



Comment [H4]: The difference between Phase 1, "determine scope" and Phase 2 "establish list" is unclear. If parallel with MRule in-scope versus 1(1) and a(2) this should be explained.