Incorporation of NRC Feedback on NUMARC 93-01 in March 2, 2011 Letter

11.3.4.3 Fire Risk Assessment Considerations

In addressing the assessment of fire risk for power operating conditions, the following guidance is provided:

With regard to item 4 from Section 11.3.3.1, removal of mitigation equipment from service, the §50.65(a)(4) program should include consideration of these risks with respect to fire, as they are not covered by existing fire protection regulations and can have a risk impact.

General Guidance: The plant personnel responsible for activities relative to fire protection and §50.65(a)(4) should communicate and maintain awareness of their respective risk management actions such that an integrated perspective of these activities is maintained. (See further discussion on risk management actions in Section 11.3.7.5~~below~~).

Guidance: Include consideration of the implications of fire risks when removing equipment from service that is known from existing plant specific evaluations to have appreciable impact on mitigation of core damage due to fire initiators. This is generally a qualitative evaluation, but quantitative approaches may be optionally used by plants that are capable of such evaluations (see Section 11.3.7.3~~below~~ for further discussion of limitations on use of quantitative techniques).

Guidance: For plants that meet §50.48/Appendix R by protecting one train of safe shutdown equipment through fire barriers, the overall risk significance (internal events and fire) may be greater for the protected train than for the redundant, non protected train of the same system, and the licensee should consider this.

Maintenance activities on the protected train should consider this greater risk, and appropriate risk assessment and management actions should be taken.

11.3.6 Assessment Methods for Shutdown Conditions

NUMARC 91-06, Guidelines for Industry Actions to Assess Shutdown Management, Section 4.0, provides a complete discussion of shutdown safety considerations with respect to maintaining key shutdown safety functions, and should be considered in developing an assessment process that meets the requirements of 10 CFR 50.65(a)(4).

Performance of the safety assessment for shutdown conditions generally involves a qualitative assessment with regard to key safety functions, and follows the same general process described in Section 11.3.4.2 above. (Those plants that have performed shutdown PSAs can use these PSAs as an input to their shutdown assessment methods.) However, some considerations differ from those associated with the at-power assessment. These include:

1. The scope of initiators to be considered in the assessment for shutdown conditions is limited to internal events, EXCEPT AS NOTED BELOW IN ITEM 5

2. The shutdown assessment is typically focused on SSCs "available to perform a function" versus SSCs "out of service" in the case of power operations. Due to decreased equipment redundancies during outage conditions, the outage planning and control process may involve consideration of contingencies and backup methods to achieve the key safety functions, as well as measures that can reduce both the likelihood and consequences of adverse events.

3. Assessments for shutdown maintenance activities need to take into account plant conditions and multiple SSCs out-of-service that impact the shutdown key safety functions. The shutdown assessment is a component of an effective outage planning and control process.

4. Maintenance activities that do not necessarily remove the SSC from service may still impact plant configuration and impact key safety functions. Examples could include:
    - A valve manipulation that involves the potential for a single failure to create a draindown path affecting the inventory control key safety function
    - A switchyard circuit breaker operation that involves the potential for a single failure to affect availability of AC power.

5. External event considerations involve the potential impacts of weather or other external conditions relative to the proposed maintenance evolution. For the purposes of the assessment, weather, external flooding, and other external impacts need to be considered if such conditions are imminent or have a high probability of occurring during the planned out-of-service duration. An example

where these considerations are appropriate would be the long-term removal of exterior doors, hazard barriers, or floor plugs.

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11.3.7.5 Fire Risk Management Actions

If the ~~above~~ evaluation described in Section 11.3.7.3 indicates risk management actions are appropriate, the following actions should be considered:

1. Primary action: Coordinate activities within the plant that could involve increased fire risk with those maintenance activities involving removal from service of mitigation equipment important for fire risk. This involves coordination of fire protection personnel with maintenance rule (a)(4) personnel. Based on this coordination, evaluate appropriate risk management actions as discussed in Section 11.3.7.~~4~~3.

2. Additional risk management actions specific to fire could include:

   - Re-scheduling activities that involve increased fire likelihood in fire areas where the out of service core damage mitigation equipment would be relied upon in the event of a fire

   - Increased fire watches in fire areas where the out of service core damage mitigation equipment would be relied upon in the event of a fire

   - Confirm the availability of an alternate success path for safe shutdown should it be needed. These could include alternative success paths excluded from design basis evaluations (e.g., Bleed & Feed Cooling (PWRs), Containment Venting (BWRs))