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LETTER

Chief, Rules and Directives Branch
Division of Administrative Services
Office of Administration
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, DC 20555-0001

SUBJECT: Comments regarding Proposed Generic Communication; Clarification of Post-Fire Safe-Shutdown Circuit Regulatory Requirements

REFERENCE: Federal Register Notice Vol. 70, No. 92 dated May 13, 2005

Dear Sir or Madam:

Engineering Planning and Management, Inc. (EPM) appreciates the opportunity to provide comments on the proposed regulatory issue summary to clarify regulatory requirement issues associated with post-fire safe shutdown circuit analyses and protection, particularly the requirements of 10 CFR 50.

Following are EPM's comments:

1. **General:** Rather than providing clarification and trying to achieve closure on fire protection issues, it appears that the NRC has re-written 10CFR50 Appendix R with the consequence, intentional or not, of making its deterministic requirements so burdensome that licensees will have no other viable option other than to transition to NFPA 805.

The promise of NFPA 805 is that it will afford the licensees additional flexibility to meet fire protection/safe shutdown requirements. However, uniform interpretation of the regulation by both the industry and the NRC must occur in order to avoid the pitfalls encountered with previous regulations.

There are numerous ambiguities within the existing fire protection regulations and guidance documents. As a result, inconsistencies exist with respect as to how the NRC has interpreted and enforced the rule and what the NRC has accepted as demonstrating compliance. These differences occur between Headquarters and regions, between different regions, and even between different sites within the same region. What may have been accepted at one site was not accepted at another.

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Ultimately, NFPA 805 must satisfy the Authority Having Jurisdiction--the NRC. Regardless of the rule (Appendix R or NFPA 805), it is not apparent how the NRC plans to ensure consistent interpretation and enforcement industry wide.

2. Any and All: Until RIS 2004-03, consideration of more than one (all) potential spurious operations in a fire area concurrently and simultaneously for 10CFR50 Appendix R has never been explicitly or implicitly identified in the "regulatory footprint."

To the contrary, there are numerous NRC documents that identify the "regulatory footprint" as requiring consideration of any and all, but one at a time. One of these documents even goes so far as to state that it is NRR's requirement to consider "any and all, one at a time." The design basis for III.G.3 Alternate Shutdown capability has never included consideration of all potential spurious operations in a fire area concurrently. Furthermore, one cannot recall an NRC audit finding within the last 20 years regarding the failure to consider all potential spurious operations in a fire area concurrently. Most licensees considered their III.G.3 fire areas to be bounded with respect to the potential adverse consequences on safe shutdown capability (considering complete fire area burnout) and proceeded to analyze all of the other plant fire areas within the context of what was ultimately found to be acceptable by the NRC as far as compliance strategies for III.G.3 fire areas. This is likely why "any and all, but one at a time" and manual operator actions were considered to be acceptable compliance strategies for fire areas thought to be less consequential than III.G.3. Again, until recently, one cannot recall an example of where the NRC has taken exception to this approach for the last 20 years.

If new information (i.e., recent cable failure testing) has come to light that makes the "any and all, one at a time" approach non-conservative (even considering the overly conservative "wall-to-wall" total burnout of the fire area) and really does necessitate consideration of multiple concurrent simultaneous spurious operations, then an explicit statement to that effect is warranted. If this is the case, then the NRC should issue a revision to the rule, because this position does not reflect existing or historical NRC requirements.

3. Manual Action: A more comprehensive definition is required to address "Manual Actions" and clarify the NRC position within the context of Section III.G.

Does the latest NRC position on the requirements of III.G.2 prohibit the use of operator actions from the Main Control Room to reset spurious actuation signals (i.e., Safety Injection at a PWR/LPCI at a BWR) and reposition components?

If so, then it appears that the NRC's current expectation is that, to achieve compliance for III.G.2, the licensee must demonstrate that their plant will be capable of automatically placing itself in a stable hot shutdown condition with no operator intervention.

Furthermore, the input signals from the field that are utilized to actuate safeguards systems (i.e., Safety Injection at a PWR/LPCI at a BWR) are typically cross-trained such that Train A input signals are supplied to both the Train A and B actuation logics; likewise, the Train B input signals are also supplied to both



the Train A and B actuation logics. Fire-damage to either the Train A or the Train B input signals from the field could result in spurious actuation of both the Train A and the Train B safeguards systems. Achieving Train A and B separation per the latest NRC position on the requirements of III.G.2 would essentially require these circuits to be protected throughout the entire plant, from the Cable Spreading Room to the field, including the process instruments/transmitters.

Is this really what the NRC intends? We assume not. Based on this, the NRC should clarify their position on the requirements of III.G.2 with respect to manual actions in the Main Control Room or Emergency Control Station in response to failures in these types of cross-trained associated circuits. It stands to reason that these types of actions would be allowed under Section III.G.1.

4. Emergency Control Station: Please provide a definition of what constitutes an acceptable "Emergency Control Station" as identified in Section III.G.1.a.

Emergency Control Stations were installed in plants for more than just fire protection reasons. Within the literal words of Section III.G.1.a., the use of an "Emergency Control Station" is an acceptable means of compliance.

Implicit within the term "Emergency Control Station" is that there must also be a "Normal Control Station." Furthermore, implicit in design intent of an Emergency Control Station is that it is provided as an alternative or independent means of control which is functionally equivalent to the Normal Control Station and which may be relied upon when the Normal Control Station is no longer viable as a means of control. Furthermore, the only reason to have to use an Emergency Control Station is as the result of some sort of failure in the normal control capability.

Given this understanding, a cable that is required to reposition a valve from the Normal Control Station but is not required to reposition the same valve when controlled from the Emergency Control Station need not be physically independent from the affected fire area if the Emergency Control Station has been credited as the location from which the valve will be positioned for safe shutdown. This action must also be identified in the licensee's fire response procedure(s). As such, these types of cables are not required to support an Appendix R safe shutdown function. In this example, control of the valve is maintained for safe shutdown from the Emergency Control Station, and the literal words of III.G.1 are met.

We realize that some licensees have abused this distinction by claiming that a handwheel on a motor-operated valve constitutes an Emergency Control Station or that manually operating a motor starter (pushing the armature button) or breaker constitutes an Emergency Control Station. However, we would propose that there is a minimum functionality that could be prescribed for an ECS such that it could be utilized consistent with III.G.1. For example, the Emergency Control Station for a motor-operated valve would need to provide for manual electrical control of the motor-operated valve (via a control switch) with open/close indication. Similar minimum functionality requirements should be easy to define for pumps, breakers, etc.



With respect to the current Staff position on Appendix R Section III.G.1 regarding associated circuit damage and operation from an Emergency Control Station, Section III.G.1.a states the following:

“One train of systems necessary to achieve and maintain hot shutdown from either the control room or emergency station(s) is free of fire damage; and”

Section III.G.1.a allows operation from an Emergency Control Station. What this literally means is that, even with cable damage that prevents operation from the Normal Control Station (Main Control Room), if the component can still be operated from the Emergency Control Station, compliance has been demonstrated with the requirements of III.G.1. As such, operation from an Emergency Control Station (given that cable damage has occurred to preclude operation from the Normal Control Station) could not have been considered to be within the purview of Section III.G. 2 (when the rule was written) and should not be considered to be within the purview of Section III.G. 2 (now).

We hope that you find EPM's comments helpful. If you have any questions, please do not hesitate to contact Mr. Francesco Pellizzari or me at 508-875-2121.

Very truly yours,



Robert Kalantari
Engineering Services
Division Manager

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