# Q&As for Congressman Edward Markey Letter on Fire Protection Regulation Changes

**1. Why is the NRC revising the rule to allow operator manual actions in lieu of fire barrier separation without an NRC-approved exemption?**

The NRC is revising the rule to allow an additional option for protecting the redundant equipment necessary for shutting down a nuclear power plant. To separate the redundant equipment, the current rule allows licensees to use: 1) a 3-hour rated fire barrier; 2) physical separation with no intervening combustibles, plus automatic fire detection and suppression; or, 3) a 1-hour rated fire barrier enclosure plus automatic fire detection and suppression. In the past, the NRC has approved licensee requests, on a plant-specific basis, to use operator manual actions instead of those three options. As such, the NRC has recognized that operator manual actions, subject to certain criteria, can be included as a fourth option for protecting redundant equipment for shutting down the plant.

**2. Is the NRC changing the rule to accommodate licensees who don't want to meet the current regulations?**

Even under the new rule, the licensees will still have to meet one of the current three compliance options unless their credited operator manual actions meet all the acceptance criteria. Licensees have always had the option to use operator manual actions for compliance under the existing rule through the exemption process, and some correctly followed that route. NRC's review of unapproved operator manual actions indicates that most would have been acceptable alternatives to the three compliance options had they been processed as exemptions. Therefore, NRC is changing the rule to reducing the burden on both itself and the licensees of the need to process a potentially large number of exemptions that would routinely be approved. Exemptions will still be necessary if all the conditions of the new rule are not satisfied.

**3. What are operator manual actions?**

Operator manual actions are those actions taken by operators to perform manipulation of components and equipment from outside the main control room (MCR) to achieve and maintain post-fire safe shutdown. These actions are performed locally by operators, typically at the equipment.

**4. Instead of changing the rule, can the NRC issue a violation to the licensee for not being in compliance with the regulation?**

Under the current rule, all unapproved operator manual actions would be considered a violation for plants that were licensed before 01/01/1979. Plants licensed after 01/01/1979 would need to be



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assessed on a case-by-case basis. Since the NRC has previously approved certain operator manual actions at some plants, there is reason to believe that most licensees would seek similar approval, further stressing the resources of both the licensee and the NRC and diverting attention away from potentially more safety-significant issues.

**5. How long have plants been implementing operator manual actions, which are unapproved by the NRC? In addition, if resident inspectors are in the plant every day, why didn't the NRC know about it sooner?**

The NRC has been aware of plants implementing unapproved operator manual actions for about 3 years. The NRC believes that use of unapproved operator manual actions became prevalent with licensees' resolution of the Thermo-Lag issue from the early 1990s. The NRC became aware of the operator manual action issue as a result of more recent inspections focused specifically on a plant's ability to safely shutdown. These types of inspections are not routinely performed by resident inspectors, but rather are performed triennially by teams of specialist inspectors.

**6. What is the NRC doing now about plants who have implemented non-NRC approved operator manual actions in certain fire areas?**

Plants are reviewed triennially for compliance with fire protection regulations, such that the entire fleet is covered every three years. This includes the use of unapproved operator manual actions against a set of criteria, established in March 2003 and based on inspection experience to determine their acceptability. If an unapproved operator manual action met the criteria and was deemed acceptable, the licensee has been required to address the non-compliance through its corrective action program. If the operator manual action did not meet the criteria and was deemed unacceptable, the finding has been entered into the Reactor Oversight Process to estimate its risk-significance and determine if a violation is warranted.

**7. Has the NRC approved operator manual actions at nuclear power plants in the past?**

Yes. In the past the NRC has approved the use of operator manual actions on a case-by-case basis at a licensee's formal request through the exemption/deviation process.

**8. If a plant is implementing currently unapproved operator manual actions, how can the NRC be certain that there is no danger to the public or to the environment?**

The NRC's main goal is safety, and the need to protect the public and environment have remained paramount even in light of the licensees' use of unapproved operator manual actions. The NRC achieves this goal partly by the use of the defense-in-depth methods. Defense-in-depth is required in the regulations and implemented in the case of fire with: 1) physical containment; 2) detection and suppression; and 3) redundant equipment. Operator manual actions do not affect the plants' ability to physically contain a fire or detect and suppress a fire. These elements ensure a reasonably high level of safety themselves. The acceptance criteria, which will be used to evaluate all currently unapproved and any future proposed operator manual actions, have been developed

from existing criteria used to evaluate other types of operator manual actions; from criteria that inspectors have used to determine overall plant safety; from human factors principles and research; from discussions with the industry and the public; and from other sources that are applicable to this issue. Therefore, the defense-in-depth elements and the carefully developed acceptance criteria for operator manual actions ensure a reasonable level of safety for both the public and the environment.

**9. Does a similar condition exist at Beaver Valley? (i.e., what manual actions are taken at Beaver Valley, in lieu of fire separation and/or detection and suppression, to achieve a safe plant shutdown following a fire?)**

One potential deviation from NRC fire protection requirements regarding reliance on manual operator actions to meet safe shutdown requirements was identified by FENOC in February 2002, evaluated by the NRC, and documented as an Unresolved Item in NRC Inspection Report 50-412/2003-03. Subsequently, FENOC performed the necessary analysis and validation of time-critical operator actions, which was recently evaluated during an NRC Triennial Fire Protection inspection conducted in January 2004, and documented in NRC IR 2004-02, dated March 2, 2004. No violation of NRC requirements was identified.

In addition, while not specifically included in the context of the "manual operator action" issue identified in Representative Markey's correspondence, another deviation from fire protection requirements currently exists at BV Unit 2. The deviation deals with possible faulting of the control circuits to the Power Operated Relief Valves (PORVs) during a fire at Unit 2. Specifically, in the rare event that a fire caused an energized cable near the control cables to the PORVs to short in the proper polarity, the PORVs could spuriously open even though they were closed and de-energized. If the fire also simultaneously damaged the block valves upstream of the PORVs, causing them to fail open or to fail in-place (assuming they were still open), then the water and steam in the reactor coolant system pressurizer would ultimately vent to the containment through these four (4) inches valves. Since the installation of fire barriers to prevent such faults external to these control cables was not considered feasible, FENOC requested in February 2004 a revision to their previously deviation from NRC Branch Technical Position (BTP) CMEB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants, " Section C.5.b, "Safe Shutdown Capability." FENOC's analysis to date has indicated that the facility can still be safely shutdown in the event of spurious operation of the PORVs and associated block valves since such electrical faults are very rare and, if they should occur, typically clear quite rapidly.

The NRC has been following this issue since late 2003 after the issue was identified by FENOC during a review by engineering. In the interim, FENOC has implemented an hourly fire watch of the plant area containing the cables in question as a compensatory measure.