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Docket: NRC-2014-0240
Mitigation Strategies for Beyond Design Basis Events

Comment On: NRC-2014-0240-0003
Mitigation of Beyond-Design-Basis Events

Document: NRC-2014-0240-DRAFT-0010
Comment on FR Doc # 2015-28589

Submitter Information

Name: Roy Mathew

General Comment

See attached file(s)

Attachments

BM

Issue:

The proposed rule does not fully address the lessons learned from the meltdown of three nuclear units and loss of spent fuel pool cooling at multiple units at the Fukushima Dai-ichi site. One of the root-causes of the accident was due to the total **loss of all power systems** (loss of all alternating current (AC) and direct current (DC) power systems including power from inverters. Based on my review of the proposed rule, 10 CFR 50.155 "Mitigation of Beyond-Design-Basis Events to Address Mitigation of Beyond-Design-Basis Events," and the Mitigation Strategy Order (EA-12-049) and its implementing guidance documents such as NEI 12-01 and JLD-ISG-2012-01, I noted that the proposed rule did not consider the loss of direct current (DC) electric power and AC power produced by inverters through station batteries. The current mitigation strategies developed by the industry are based on the availability of power from Batteries and the inverters. Without the initial assumption of **loss of all power systems** (AC and DC systems) and appropriate Phase 1 mitigation strategy to address loss of all power, the U.S nuclear power plants will not be able to prevent a future beyond design basis event such as the Fukushima Dai-ichi accident. It should be noted that the current station blackout rule (10 CFR 50.63) also did not consider the loss of dc and vital ac power from inverters. For passive plants such as the AP 1000 and ESBWR reactor designs, mitigating strategies involving an initiating event that causes the loss of DC power is detrimental in preventing a nuclear reactor accident such as the Fukushima Dai-ichi.

Recommendation:

A loss of DC power from batteries and vital AC power from inverters should also be considered in the assumption for developing mitigating strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities since both vital AC and DC systems are located in the same area where most likely the same initiating external event could disable both AC and DC power systems. As stated earlier, the extensive damage to site facilities at Fukushima Dai-ichi that resulted in meltdown of three nuclear units was resulted from the loss of all AC and DC power. Therefore, I am requesting that the Commission amend the proposed rule for consideration of loss DC power and power from inverters in addition to the loss of AC power as initial assumptions the licensees need to consider for mitigating beyond design basis events such as the Fukushima Dai-ichi accident.