

Title	Submitter	Submittal Date	Source Document	Description	Valid Issue	SL Disposition	SC Disposition
Robots	Dr. Ralph Way	11/10/2011	Verbal	U.S. industry should have radiation hardened robots at their disposal for accident analysis or inspection during a Fukushima-like accident (i.e., a prepositioned asset). NRC should consider having industry's availability to these robots be a requirement.	No	No SC Action Needed. While various types of robots were found to be useful during the Fukushima response, this recommendation is too specific for NRC regulatory action. SL's stated that the NRC does specify capabilities for accident analysis that all licensee's need to meet; however, it is up to each particular licensee as to how they choose to meet the capability. *This issue will be sent to appropriate technical staff to be considered in future regulatory actions, as applicable.	N/A
Missing EAL	Randy Sullivan	11/22/2011	E-Mail	The EP staff has identified a missing emergency action level (EAL) in the approved EAL schemes required by 10 CFR 50.47(b)(4). U.S. licensee should have an GE EAL for the immediate loss of all AC and DC power, which is the condition in which Fukushima Daiichi Unit 1 found itself after the tsunami. This is essentially the same as the existing EAL for SBO that exceeds the coping time, which is currently a GE.	Yes	SC Action Needed.	TBD
Accident Recovery and Restoration Branch	Brian Bennay	11/28/2011	E-Mail	I think the agency needs to have an Office or at least a Branch that deals with Accident Recovery and Restoration generically, all the time. It seems as if we are equipped to handle an accident or incident while it is happening, however, we appear to stumble with the restoration process. I think this may be due to a lack of planning...  I also think this Office or Branch could establish procedures and processes, should the need arise, for how an area is restored that would provide credibility to the agency. I'm concerned that we're overly focused on what went wrong in Japan.	No	No SC Action Needed. NSIR has done a self-assessment of its response and restoration processes and has incorporated several lessons learned into its current plans and procedures. SL's stated that since this work is already being performed, this recommendation should be sent to the SC for further disposition or prioritization. *This issue will be sent to the appropriate technical staff (NSIR) be considered in their future actions, as applicable.	N/A
Hydrogen Monitoring Instrumentation	David Lochbaum	2/20/2012	E-Mail	Attached is an electronic version of a letter recommending instrumentation be provided within the secondary containment of BWRs with Mark I and II containments, the aux building of BWRs with Mark III containments, and the fuel handling buildings of PWRs.	Yes	TBD	TBD
Generators for HPCI and RCIC	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	On the HPCI and RCIC systems, install a generator on each turbine with sufficient capacity to provide electrical power to maintain a full charge on the "essential" emergency battery buss. This would prolong the operation of these systems while there is an availability of steam in the vessel sufficient to operate the turbines. Emergency procedures should be updated to include operation of the newly-installed HPCI and RCIC generators during the station blackout conditions. On PWRs, a similar steam-driven charging system could be added to the Auxiliary Feedwater Pump Turbine steam supply line.	Yes	TBD	TBD
HPCI and RCIC Control Valves	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	At most BWR plants, the HPCI and RCIC control valves are designed to fail in the "as is" position. To ensure that the HPCI and RCIC systems are available during loss of both the emergency diesel AC power and offsite AC power, modify the control valve logic to have the valves fail in the "safe" position (defined as the open or closed valve position needed for the system to perform its intended function) if the logic senses a loss of all AC power to the emergency cooling systems for a given period of time (for instance, after 10 minutes of no AC power, then logic would allow the valve to fail in the safe position). This would allow a pathway for steam to continue to be supplied to the Torus area and will mostly likely help prevent over-pressurization of the vessel, thus possibly preventing SRV opening, which would accelerate the uncovering of the reactor fuel. This logic modification is recommended because, under present conditions, as the emergency buss loses its charge, the behavior of the control valve position logic becomes unpredictable. Similar evaluation for PWR ECCS valves should be performed.	Yes	TBD	TBD
Air/Water Pathways Between Units	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Require utilities to confirm that no air/water open pathways exist between units during power operations. Many multiunit plants have unit crossties (especially in Plant Service Water Systems) that should not be open during power operation. They are typically used during one unit's outage while the other is running. This could be a problem if the running unit has an accident and leakage occurs to the outage unit, since the Reactor Building would likely be open to atmosphere and some systems might be disabled. Shared drainage lines or storage reservoirs should also not be permitted during power operation of one or more units. Personnel and equipment hatches leading from or to common areas should be sealed during power operation. Piping and cable penetrations should be sealed such that there is no communications between units.	Yes	TBD	TBD
Radiation Leakage Pathways	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Require utilities to evaluate potential radioactive leakage pathways to the outside of the primary/secondary containment. For example, apparently radioactive water made its way from the Reactor Building to the Turbine Building and then into the Circulating Water canal on several of the Fukushima units.	Yes	TBD	TBD
AC Power and Water Supply Junctions	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	At the plant boundary, erect a structure to house an AC power junction and a water supply junction. The purpose of the structure would be to provide a safe place away from the plant high radiation zones so that personnel could install alternate AC power and emergency water to the vital cooling systems without being exposed to the life-threatening high radiation doses that the Japanese workers experienced at the Fukushima event. The electrical wiring and water piping would be placed underground from the storage house to the plant to protect them from above-ground adverse conditions. However, the design of the underground lines would need to be seismically qualified; otherwise, if ruptured during the earthquake, little is gained. This would allow accessibility to a mobile AC generator to supply backup power to the emergency systems and water tank trucks to provide emergency water supply to the condensate storage tank or alternate water connection points and to the fuel pool from a safe distance. To improve the reliability that at least one of the two means of backup supply to the plant would function, the AC power cables and water piping should be housed in separate structures.	Yes	TBD	TBD

Wireless Cameras	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Install wireless cameras in vital plant areas that would provide initial area surveillance prior to robotic and/or personnel entry. This would most likely reduce the possibility of damage to the robotic device and/or high health risk to personnel by identifying severe conditions in the area. These cameras may also be able to provide rapid view of the plant to assess any seismic damage due to the earthquake.	Yes	TBD	TBD
Robotic Devices	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Develop a robotic device design to perform specialize and fundamental operator functions in a power plant environment in areas of potentially high radiation fields. The robotic device should be able to survey the damage up close and provide video feedback, perform minor repairs, and simple plant manipulations. This would most likely reduce the initial high radioactive risk to personnel by identifying damage and high radioactive areas which would be useful in an entry plan. The robotic device storage system would need to be seismic qualified to help ensure this valuable asset can survive the initial earthquake.	Yes	TBD	TBD
Emergency Procedures Update	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Emergency procedures and Chapter 15 should be upgraded to include this event.	Yes	TBD	TBD
Security Procedures Update	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Security procedures and surveillance should be upgraded since the BWR design weakness that could lead to a catastrophic event has been exposed: loss of both offsite AC power and emergency AC power renders the primary emergency heat removal and flood-up systems inoperable since they depend on AC power. The offsite AC power substation should be monitored by video cameras. Some additional security measures should be applied to the storage and maintenance of the diesel fuel. For instance, a saboteur could simply contaminate the fuel and disable the substation to bring about this event. (It would most likely be an inside job.)	Yes	TBD	TBD
Resupply of Fuel	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Planning, preparation, and Emergency Plan procedures for potential events that could cause an extended station blackout should consider specific plans to ensure re-supply of fuels for generators, backup equipment as generators, and other essential equipment, supplies, and personnel in light of the situation in the area following the event. For example, in the case of a significant seismic event, it could be postulated that the grid will be disrupted (as actually seen at Fukushima) as well as roads, pipelines, railroads, etc. If roads and/or railroad lines are passable or can quickly be made passable (including using heavy tracked construction equipment), then replacement supplies and equipment can be brought in. If not passable, consideration should be for pre-planned delivery by helicopter or even airdrop including suitable portable electrical generators. Planning and preparation will need to consider radiological concerns and defenses for such re-supply effort. The assessment should include evaluation of alternate water sources in the event that on-site storage reservoirs fail.	Yes	TBD	TBD
Reassessment of Hydrogen Generation and Mitigation	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	A reassessment of hydrogen generation and mitigation methods should be performed. This may include evaluation of the consequences of detonation. If structural damage could occur (like the sheet metal upper containment of the Mark I design), the structures should be reinforced.	Yes	TBD	TBD
On-Site Robotic Surveillance	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Utilities should have available on-site robotic surveillance equipment (dosimetry and cameras) capable of maneuvering through rubble beds and up or down stairways and ladders.	Yes	TBD	TBD
Operator and Management Training Alternate Level	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Operator and management training improvements needed (act now vs. wait and see )	Yes	TBD	TBD
Measuring Instrumentation	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	Alternate level measuring instrumentation is needed for spent fuel pools and reactor vessels, especially when fuel is degraded (perhaps infrared cameras or external ultrasonic/laser devices.	Yes	TBD	TBD
Reassessment of Seismic/ Flooding Design Criteria.	John Budzynski, Jim Gilmer, Gene Eagle	12/19/2011	NRC Employee Suggestion (2011-09)	The Nuclear Industry should reassess seismic/flooding design criteria.	Yes	TBD	TBD