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General Comment

Please see attached comments in BWROG Letter BWROG-12032.

Attachments

2012-07-06 LTR to NRC re BWROG input to RHV ISG Rev (BWROG-12032)

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BWROG-12032
July 6, 2012

Project No. 691

Ms. Cindy Bladey
Chief, Rules, Announcements, and Directives Branch (RADB)
Office of Administration
Mail Stop: TWB–05–B01M
U.S. Nuclear Regulatory Commission
Washington, DC 20555–0001

Subject: **Interim Staff Guidance JLD–ISG–2012–02; Compliance With Order EA–12–050, Order Modifying Licenses With Regard to Reliable Hardened Containment Vents**

Attachment: BWR Owners' Group Comments on Draft ISG for Order EA-12-050

Dear Ms. Bladey:

In response to the June 7 Federal Register Notice, the BWR Owners' Group (BWROG) is submitting comments on the subject Interim Staff Guidance (ISG) for Order EA-12-050 with regard to Reliable Hardened Vents. The BWROG has met three times with NRC staff at various points in the development of this ISG document. We understand that the NRC will issue its final ISG by late August 2012, and appreciate the opportunity to provide these comments.

If you have any questions regarding the BWROG comments, please contact me at (630) 657-3897 or Robert Whelan, BWROG Project Manager, at (910) 200-1006.

Sincerely,

Frederick P. "Ted" Schiffley, II
Chairman
BWR Owners' Group

cc: C.J. Nichols, BWROG Program Manager
BWROG Primary Representatives
Robert Fretz, NRC

Enclosure

ATTACHMENT

BWROG COMMENTS AND QUESTIONS ON NRC INTERIM STAFF GUIDANCE POSITIONS FOR RHV ORDER EA-12-050

July 6, 2012

BWROG COMMENTS AND QUESTIONS ON NRC INTERIM STAFF GUIDANCE POSITIONS FOR RHV ORDER EA-12-050
July 6, 2012

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1. Functional Requirements		
1.1 HVCS Performance Objectives		
1.1.1 The HCVS shall be designed to minimize the reliance on operator actions.	During events that significantly challenge plant operations, individual operators are more prone to human error. In addition, the plant operations staff may be required to implement strategies and/or take many concurrent actions that further places a burden on its personnel. During the prolonged SBO condition at the Fukushima Dai-ichi units, operators faced many significant challenges while attempting to restore numerous plant systems that were necessary to cool the reactor core, including the containment venting systems. The difficulties faced by the operators related to the location of the HCVS valves, ambient temperatures and radiological conditions, loss of all alternating current electrical power, loss of motive force to open the vent valves, and exhausting DC battery power. The NRC staff recognizes that operator actions will be needed to operate the HCVS valves; however, the licensees shall consider design features for the system that will minimize the need and reliance on operator actions to the extent possible during a variety of plant conditions, as further discussed in this ISG. The HCVS shall be designed to be started from a control panel located in the main control room or a remote but readily accessible location. The HCVS shall be designed to be fully functional and self sufficient with permanently installed equipment in the plant, without the need for portable equipment or connecting thereto, until such time additional on-site or off-site personnel and portable equipment become available. The HCVS shall be capable of operating in this mode (i.e., relying on permanently installed equipment) for at least 24 hours during the prolonged SBO, unless a shorter period is justified by the licensee. The HCVS operation in this mode depends on a variety of conditions, such as the cause for the SBO (e.g., seismic event, flood, tornado, high winds), severity of the event, and time required for additional help to reach the plant, move portable equipment into place and make connections to HCVS.	***Q: What was the rationale behind 24 hours? Not consistent with 6-hour ERO response time per Recommendation 9.3.*** ***C: Change "started" to "operated" in first line of 2nd paragraph.*** ***Q: Are the following acceptable examples of readily accessible locations:*** ***Remote shutdown panel*** ***An area in the reactor or turbine building normally visited by operators on rounds not involving a contaminated, a high rad or area only accessible by a ladder. In addition, this area should be above the design basis external flood elevation or protected from the design basis external flood?***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.1.2 The HCVS shall be designed to minimize plant operators' exposure to occupational hazards, such as extreme heat stress, while operating the HCVS system.	During a prolonged SBO, the drywell, wetwell (torus) and nearby areas in the plant where HVCS components are expected to be located will likely experience an excursion in temperatures due to inadequate containment cooling combined with loss of normal and emergency building ventilation systems. In addition, installed normal and emergency lighting in the plant may not be available. Licensees should take into consideration plant conditions expected to be experienced during design basis accidents when locating valves, instrument air supplies, and other components that will be required to safely operate the system. Components required for manual operation should be placed in areas that are readily accessible to plant operators, and not require additional actions, such as ladders, temporary scaffolding, to operate the system. When developing a design strategy, the NRC staff expects licensees to analyze potential plant conditions and use its acquired knowledge of these areas, in terms of how temperatures would react to extended SBO conditions and the lighting that would be available. This knowledge also provides an input to system operating procedures, the choice of protective clothing, required tools and equipment, and portable lighting that would be kept in nearby storage locations.	***Q: Should the word "applicable' be inserted in front of "Design basis accidents" since conditions following loss of coolant breaks or main steam line breaks, for example, don't seem applicable?***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.1.3 The HCVS shall also be designed to minimize radiological consequences that would impede personnel actions needed for event response.	The design of the HCVS should take into consideration the radiological consequences resulting from the event that could negatively impact event response. During the Fukushima event, personnel actions to manually operate the vent valves were impeded due to the location of the valves in the torus rooms. The HCVS shall be designed to be placed in operation by operator actions at a control panel, located in the main control room or in a remote location. The system shall be deigned to function in this mode with permanently installed equipment providing electrical power (e.g., DC power batteries) and valve motive force (N2/air cylinders). The system shall be designed to function in this mode for a minimum duration of 24 hours with no operator actions required or credited, other than the system initiating actions at the control panel. Durations of less than 24 hours will be considered if justified by adequate supporting information from the licensee. To ensure continued operation of the HCVS beyond this duration, licensees are allowed to credit manual actions, such as moving portable equipment to supplement electrical power and valve motive power sources. In response to Generic Letter (GL) 89-16, a number of facilities with Mark I containments installed vent valves in the torus room, near the drywell, or both. The HCVS improves the chances of core cooling by removing heat from containment and lowering containment pressure, when core cooling is provided by other systems. If core cooling were to fail, closure of the vent valves would become necessary. Therefore, wetwell is the preferred venting location to take advantage of the scrubbing from the suppression pool during the elapsed time between the onset of core damage and closure of the vent valves. If venting from locations other than wetwell is desired, licensees must provide sufficient justification for their request. In any case, licensees with valves or other HCVS equipment in these areas will need to justify continued use of these locations, and demonstrate that reliable operator actions are possible. In addition, leakage from the HCVS within the plant and the location of the external release from the HCVS could also impact the event response from on-site operators and off-site help arriving at the plant. An adequate strategy to minimize radiological consequences that could impede personnel actions should include the following:	***C: In the sentence " If venting from locations other than wetwell is desired, licensees must provide sufficient justification for their request. If only venting from locations other than the wetwell, delete "is desired".***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
	1. Licensees shall provide permanent radiation shielding where necessary to facilitate personnel access to valves and allow manual operation of the valve locally. Licensee may use alternatives such as providing features to facilitate manual operation of valves from remote locations, as discussed further in this guidance under Requirement 1.2.2 or relocate the vent valves to areas that are significantly less challenging to operator access/actions. 2. In accordance with Requirement 1.2.8, the HCVS shall be designed for pressures that are consistent with maximum containment design pressures as well as dynamic loading resulting from system actuation. In addition, the system shall be leak-tight. As such, ventilation duct work (i.e., sheet metal) shall not be utilized in the design of the HCVS. Licensees should perform appropriate testing, such as hydrostatic or pneumatic testing, to establish the leak-tightness of the HCVS. 3. The HCVS release to outside atmosphere shall be at an elevation higher than adjacent plant structures. Release through existing plant stacks is considered acceptable, provided the guidance under Requirement 1.2.6 is satisfied. If the release from HCVS is through a vent stack different than the plant stack, the elevation of the stack should be higher than the nearest building or structure.	

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.2 HCVS Design Features:		
1.2.1 The HCVS shall have the capacity to vent the steam/energy equivalent of 1 percent of licensed/ rated thermal power (unless a lower value is justified by analyses), and be able to maintain containment pressure below the primary containment design pressure. .	Beyond design basis external events such as a prolonged SBO could result in the loss of active containment heat removal capability. The primary design objective of the HCVS is to provide sufficient venting capacity to prevent a long-term overpressure failure of the containment. NRC staff has determined that a vent sized under conditions of constant heat input at a rate equal to 1 percent of rated thermal power and containment pressure equal to the primary containment pressure limit is sufficient to prevent the containment pressure from increasing any further. This determination is based on studies that have shown that the torus suppression capacity is sufficient to remove decay heat generated during the first three hours following the shutdown of the reactor, that decay heat is typically less than 1 percent of rated thermal power three hours following shutdown of the reactor, and continues to decrease to well under 1 percent, thereafter. Licensees shall have an auditable engineering basis that provides reasonable assurance that the HCVS will have sufficient venting capacity under such conditions. Licensees may also use a venting capacity sized under conditions of constant heat input at a rate lower than 1 percent of thermal power if it can be justified by analysis that containment design pressure would not be exceeded. In cases where plants were granted, have applied, or plan to apply for extended power uprate (EPU), the licensees shall use 1 percent thermal power corresponding to the EPU thermal power. The basis for the venting capacity shall give appropriate consideration of where venting is being performed from (i.e., wetwell or drywell) and the difference in pressure between the drywell and the suppression chamber.	***Q: The order and the ISG refer to different containment pressures, design and PCPL. Which is correct?***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.2.2 The HCVS shall be accessible to plant operators and be capable of remote operation and control, or manual operation, during sustained operations.	The preferred location for remote operation and control of the HCVS is from the main control room. However, alternate locations to the control room are also acceptable, provided the licensees take into consideration the following: 1. Sustained operations mean the ability to open/close the valves multiple times during the event. 2. An assessment of temperature and radiological conditions that operating personnel may encounter both in transit and locally at the controls. Licensee may use alternatives such as providing features to facilitate manual operation of valves from remote locations or relocating/reorienting the valves. 3. All permanently installed HCVS equipment, including any connections required to supplement the HCVS operation during a prolonged SBO (electric power, N2/air) shall be located above the maximum flood level or protected from any postulated flood that could potentially occur at the plant concurrent with the prolonged SBO 4. During a prolonged SBO, manual operation/action may also become necessary to operate the HCVS. As demonstrated during the Fukushima event, the valves lost motive force including electric power and pneumatic air supply to the valve operators, and control power to solenoid valves. If direct access and local operation of the valves is not feasible due to temperature or radiological hazards, licensees should include design features to facilitate remote manual operation of the HCVS valves by means such as reach rods, chain links, hand wheels, and portable equipment to provide motive force (e.g., air/N2 bottles, diesel powered compressors, and DC batteries). The connections between the valves and portable equipment should be designed for quick deployment. If a portable motive force (e.g., air or N2 bottles, DC power supplies) is used in the design strategy, licensees shall provide reasonable protection of that equipment from external events (e.g., seismic, flood, tornado) at readily accessible storage locations. 5. The design shall preclude the need for operators to move temporary ladders or operate from atop scaffolding to access the valves or remote operating locations.	***Q: Is 5 cycles of opening/closing the main isolation valves per 24 hours an acceptable number of cycles without detailed plant-specific analysis?*** ***Q: Would it be acceptable to use a pressure control device downstream of containment isolation valves (CIV) to allow the option of continuous venting to maintain a specific containment pressure?*** ***C: The "maximum flood" applicable to the design of the HCVS is the design basis external flood.*** ***C: "Reasonable protection" should be defined by reference to the NRC Order EA-12-049 ISG, rather than by separate definition in the NRC Order EA-12-050 ISG.*** ***Q: Is the direct access operation of valves required in addition to the remote operation? Could a redundant DC circuit and air supply substitute for the direct access operation?***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.2.3 The HCVS shall include a means to prevent inadvertent actuation.	The design of the HCVS shall incorporate features, such as control panel key-locked switches, locking systems or administrative controls to prevent the inadvertent use of the vent valves. The system shall be designed to preclude inadvertent actuation of the HCVS due to any single active failure. The design should consider general guidelines such as single point vulnerability and spurious operations of any plant installed equipment associated with HCVS. The objective of the HCVS is to provide sufficient venting of containment and prevent long-term overpressure failure of containment following the loss of active containment heat removal capability or prolonged SBO. However, inadvertent actuation of HCVS due to a design error, equipment malfunction, or operator error during a design basis loss-of-coolant accident (DBLOCA) could have an undesirable effect on the containment accident pressure (CAP) to provide adequate NPSH to the emergency core cooling system (ECCS) pumps. Therefore, prevention of inadvertent actuation, while important for all plants, is extremely more important for plants relying on CAP. The licensee submittals on HCVS shall specifically include details on how this issue will be addressed on their individual plants for all situations when CAP credit is required.	***Q: Is it the NRC's intention to exclude the use of rupture disks as a means to prevent inadvertent actuation of the HCVS?***
1.2.4 The HCVS shall include a means to monitor the status of the vent system (e.g., valve position indication) from the control room or other location(s). The monitoring system shall be designed for sustained operation during a prolonged SBO.	Plant operators must be able to readily monitor the status of the HVCS at all times, including being able to understand whether or not valves are open or closed, system pressure and effluent temperature. Other important information includes the status of supporting systems, such as instrument air (or N2, if used) valve position indication and pressure. The means to monitor system status shall support sustained operations during a prolonged SBO. "Sustained operations" may include the use of portable equipment to provide an alternate source of power to components used to monitor HCVS status.	***Q; There are many ways to monitor the status of the HCVS system. Is the guidance providing examples or requiring the options of valve position, system pressure and effluent temperature? Other parameters, for example a rad monitor (which some plants have already installed) could provide equivalent monitoring to some of the parameters listed.***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.2.5 The HCVS shall include a means to monitor the effluent discharge for radioactivity that may be released from operation of the HCVS. The monitoring system shall provide indication in the control room or other location(s), and shall be designed for sustained operation during a prolonged SBO.	Licensees shall provide a means to monitor overall radioactivity that may be released from the HCVS discharge. The radiation monitor does not need to meet the requirements of NUREG 0737 for monitored releases, nor does it need to be able monitor releases quantitatively to ensure compliance with 10 CFR Part 100 or 10 CFR Section 50.67. A wide range monitoring system to monitor the overall activity in the release providing indication that effluent from the reactor are passing by the monitor is acceptable. The monitoring system shall be provided with indication in control room or a remote location for the first 24 hours after the initiation of the HCVS with electric power provided by permanent DC battery sources, supplemented by portable power sources for sustained operations. The remote indicating location should be in the close proximity to other operator actions required for sustained operation of the HCVS, such as manual connections to the portable motive force (N2 or air bottles, air compressor) and electric power for the system. Monitoring is required only during the events that necessitate operation of the HCVS.	***Q: Is an acceptable rad monitor range 0.1 to 1,000mr/hr?*** ***Q: Is periodic monitoring of a rad monitor recorder an acceptable monitoring method?*** ***Q: Is it acceptable for the remote indicating location to be in the remote shutdown panel or is it the expectation of the NRC that it be near the manual connections? Please explain the purpose of the staff intent.*** ***Q; Can supplemental portable power sources be used to power rad monitoring during the first 24 hours?***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.2.6 The HCVS shall include design features to minimize unintended cross flow of vented fluids within a unit and between units on the site.	At Fukushima, an explosion also occurred in Unit 4, which was in a shutdown at the time of the event. Although the facts have not been fully established, a likely cause of the explosion is that hydrogen leaked from Unit 3 to Unit 4 through a common venting system. System cross-connections present a potential for steam, hydrogen, and airborne radioactivity leakage to other areas of the plant and to an adjacent plant at multi-unit sites if the units are equipped with common vent piping. In this context, the most preferable method is to have a dedicated vent for each plant with no cross-connections. If this is determined to be not feasible, licensees shall provide design features to prevent the cross flow of vented fluids to migrate to other areas within the plant or to an adjacent plant at multi-unit sites. The current design of the hardened vent at many plants the U.S. includes a tie in with the standby gas treatment system, which contains sheet metal ducts that are not as leak tight as hard pipes. In addition, dual unit plant sites are often equipped with a common plant stack. Licensees shall provide design features to eliminate or minimize the unintended cross flow from the HCVS to other areas within the plant or to another plant on the site. Acceptable means for prevention of cross flow is by valves, leak-tight dampers, and check valves, which shall be designed to automatically close upon the initiation of the HCVS and shall remain closed for as long as the HCVS is in operation. If power is required for the interfacing valves to fail in the isolation position, it shall be from the same power sources as the vent valves. Leak tightness of any such barriers shall be periodically verified by testing.	***Q: Since automatic closure of interconnected systems upon initiation of the hardened vent flow path could add significant complexity to the design, is remote manual operation/verification from the control room or remote location acceptable (especially if these valves are designed as fail-shut on a loss of control circuit power or air)?*** ***C: Add "Examples of" in front of "acceptable means"*** ***C: Leak tightness is addressed in 1.1.3 and 1.2.6 and should only be included under 1.2.7.***
1.2.7 The HCVS shall include features and provision for the operation, testing, inspection and maintenance adequate to ensure that reliable function and capability are maintained.	The HCVS piping run shall be designed to eliminate the potential for condensation accumulation, as subsequent water hammer could complicate system operation during intermittent venting or to withstand the potential for water hammer without compromising the functionality of the system. Licensees shall provide a means (e.g., drain valves, pressure and temperature gauge connections, etc.) to periodically test system components, including exercising (opening and closing) the vent valve(s). The HCVS valves and the interfacing system valves shall be cycled every operating cycle. System visual inspections and walkdowns shall be conducted every operating cycle. The venting procedure shall be validated every other operating cycle by conducting an open/close test of the HCVS from its control panel and ensuring that all interfacing system valves move to their proper (intended) positions.	***Q: If using a rupture disk, is replacing the rupture disk according to the manufacturer's recommendation, not to exceed every ten years, acceptable?*** ***C: It may not be possible to totally eliminate condensate accumulation, HCVS design must be able to accommodate condensation (including potential water hammer loads, if applicable).*** ***C: Add "control logic" after 2nd HCVS***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
1.2.8 The HCVS shall be designed for pressures that are consistent with maximum containment design pressures as well as dynamic loading resulting from system actuation.	The vent system shall be designed for the higher of the primary containment pressure limit or 100 psig, and a saturation temperature corresponding to the design pressure. The piping, valves, and the valve actuators shall be designed to withstand the dynamic loading resulting from the actuation of the system, including piping reaction loads from valve opening and potential for water hammer from accumulation of steam condensation during multiple venting cycles.	***Q: What is the basis for 100 psig? Because our procedures operate the vent prior to reaching high pressures, is it acceptable to design the system to the higher of the containment design pressure or PCPL?*** ***Q: If the answer to the above question is "no", then is the 100 psig confined to piping or do the valves need to be designed to operate with a 100 psi differential pressure?***
1.2.9 The HCVS shall discharge the effluent to a release point above main plant structures.	The HCVS release to outside atmosphere shall be at an elevation higher than adjacent plant structures. Release through existing plant stacks is considered acceptable, provided the guidance under Requirement 1.2.6 is satisfied. If the release from HCVS is through a stack different than the plant stack, the elevation of the stack should be higher than the nearest building or structure. The release point should be situated away from ventilation system intake and exhaust openings or emergency response facilities. The release stack or structure exposed to outside shall be designed or protected to withstand missiles that could be generated by the external events causing the prolonged SBO (e.g., tornadoes, high winds).	***Q: One of the higher locations of the reactor building is typically the exhaust plenum. Is running the vent piping up the side of the exhaust plenum acceptable?***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
2. HCVS Quality Standards for reliable HCVS		
2.1 The HCVS vent path up to and including the second containment isolation barrier shall be designed consistent with the design basis of the plant. These items include piping, piping supports, containment isolation valves, containment isolation valve actuators and containment isolation valve position indication components.	The design out to and including the second containment isolation barrier shall meet safety-related requirements consistent with the design basis of the plant, including General Design Criteria (GDC)-54 "Piping systems penetrating containment" and GDC-56 "Primary containment isolation." The piping and piping supports shall be designed to meet Seismic Category I requirements. The staff notes that in response to GL 89-16, in many cases, the HCVS vent line connections were made to existing systems. In some cases, the connection was made in between two existing containment isolation valves and in others to the vacuum breaker line. A design that is free of physical and control interfaces with other systems offers the potential outcome for a highly reliable vent system. The NRC staff prefers HCVS designs with a dedicated penetration and dedicated vent valves that would be kept closed at all conditions except for periodic testing and when the HCVS is called into operation with a short run of piping leading to the vent release point. If the licensee determines that dedicated penetrations are not feasible, the existing containment isolation valves and the vent valve also become part of the containment isolation barrier. The HCVS system design shall not preclude the containment isolation valves, including the vent valve from performing their intended containment isolation function consistent with the design basis for the plant. The design shall include all necessary overrides of containment isolation signals and other interface system signals to enable the vent valves to open upon initiation of the HCVS from its control panel.	***C: Delete "including General Design Criteria (GDC)-54 "Piping systems penetrating containment" and GDC-56 "Primary containment isolation."' from the first sentence. Delete the second sentence, "The piping and piping supports shall be designed to meet Seismic Category I requirements."***

NRC ORDER PROVISIONS	NRC DRAFT ISG STAFF POSITIONS	BWROG COMMENTS (C) AND QUESTIONS (Q) ON NRC DRAFT ISG
2.2 All other HCVS components shall be designed for reliable and rugged performance that is capable of ensuring HCVS functionality following a seismic event. These items include electrical power supply, valve actuator pneumatic supply and instrumentation (local and remote) components.	All components of the HCVS beyond the second containment isolation barrier shall be designed to ensure HCVS functionality following the plant's design basis seismic event. These components include, in addition to the hardened vent pipe, electric power supply, pneumatic supply and instrumentation. The design of power and pneumatic supply lines between the HCVS valves and remote locations (if portable sources were to be employed) shall also be designed to ensure HCVS functionality. Licensees shall ensure that the HCVS will not impact other safety related structures and components and that the HCVS will not be impacted by other non-seismic components. The staff prefers that the HCVS components, including the piping run, be not located in nonseismic structures. However, short runs of HCVS piping in non-seismic structures are acceptable if the licensee provides adequate justification on the seismic ruggedness of these structures. The hardened vent shall be designed to conform to the requirements of the applicable American Society of Mechanical Engineers Boiler and Pressure Vessel Code and the applicable Specifications, Codes and Standards of the American Institute of Steel Construction.	***C: Delete "requirements of the applicable American Society of Mechanical Engineers Boiler and Pressure Vessel Code and" and "the American Institute of Steel Construction."***
3. Hardened Containment Venting System Programmatic Requirements		
3.1 The Licensee shall develop, implement, and maintain procedures necessary for the safe operation of the HCVS. Procedures shall be established for system operations when normal and backup power is available, and during SBO conditions.	Procedures shall be developed describing when and how to place the HCVS in operation, the location of system components, discussion of instrumentation available, normal and backup power supplies, directions for sustained operation, including the storage location of portable equipment, training on operating the portable equipment, and testing of equipment. The procedures shall identify appropriate conditions and criteria for use of the HCVS. The procedures shall clearly state the nexus between CAP and ECCS pumps during a DBLOCA and how an inadvertent opening of the vent valve could have an adverse impact on this nexus. The licensee shall establish provisions for out-of-service requirements of the HCVS and compensatory measures. These provisions shall be documented in the Technical Requirements Manual (TRM) or other similar document. The allowed out-of-service time for the HCVS shall not exceed seven days during modes 1, 2, and 3.	***Q: What was the NRC's expectation for licensee action after 7 days?***