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IN 86-55

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

July 10, 1986

IE INFORMATION NOTICE NO. 86-55: DELAYED ACCESS TO SAFETY-RELATED AREAS AND  
EQUIPMENT DURING PLANT EMERGENCIES

Addressees:

All nuclear power reactor facilities holding an operating license or a construction permit.

Purpose:

This notice is provided to alert recipients of a potentially significant problem concerning the ability to reach and operate essential equipment during an emergency. The problem involves equipment located in areas where access is controlled because of potentially high radiation or because it is classified as a vital area. This concern also includes valves that are chained and locked to provide positive position control. It is expected that recipients will review the information for applicability to their facilities and will consider actions, if appropriate, to preclude a similar problem at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Past Related Correspondence:

IE Bulletin 77-08, "Assurance of Safety and Safeguards During an Emergency," December 28, 1977.

IE Bulletin 79-16, "Vital Area Access Controls," July 26, 1979.

IE Information Notice 83-36, "Impact of Security Practices on Safe Operations," June 9, 1983.

Description of Circumstances:

Two events occurred in 1985, during which local operations necessary to control these events were hampered or potentially hampered by features designed to control access to areas or equipment.

During the Davis-Besse loss of feedwater event on June 9, 1985, locked doors and valves had a significant potential of preventing operator actions necessary to compensate for equipment malfunctions. With all sources of feedwater disabled and the steam generators drying out rapidly, a number of operators

were required to go to several secured locations to start pumps and open valves to establish auxiliary feedwater flow. Some operators were concerned about whether they would be able to open the necessary locks. Not all of the operators had keys. Although some of the areas could be entered with key cards, these had been known to fail. One operator stated he was uncertain that he would be able to carry out his task.

In this instance, the operators were able to establish the necessary feedwater flow before the reactor suffered any fuel degradation. However, one of the principal findings of the NRC investigative team stated: "The locked doors and valves in the plant had the potential for significantly hampering operator actions taken to compensate for equipment malfunctions during the event and were a significant concern to the equipment operators" [NUREG-1154 Section 8, Item (9)].

During a Limerick remote reactor cooldown demonstration on September 11, 1985, a reactor core isolation cooling (RCIC) injection valve failed to open automatically and it became necessary for an operator to enter this locked area to manually open the valve. At this point the operator discovered that the compartment and equipment access keys had not been made available for the remote shutdown function. A technician was requested to obtain a key to the RCIC area from a set maintained by the health physics personnel. However, the technician had the wrong key when he met the operator at the RCIC area 15 minutes later. When the operator finally got the right key and entered the area, he found the valve handwheel chained and locked. Neither the operator nor the operating crew back at the remote shutdown panel had a key for this lock. Bolt cutters finally were located and the chain was cut. Again this problem was resolved without the occurrence of any damage. However, this event occurred early during plant startup when the decay heat was low and the control rod drive system was able to provide sufficient water for makeup. Had an actual emergency required abandonment of the control room following full-power operation, it is questionable whether the operators would have been able to take the necessary action in a timely manner.


#### Discussion:

The need to control access to high radiation areas, vital areas and operational equipment, and the need for quick access to such areas and equipment in an emergency, may conflict unless careful plans are made to accommodate both needs. The locking of high radiation areas is required by 10 CFR 20.203(c)(2)(iii) or the facility technical specifications. Protection against radiological sabotage by locking doors to vital areas and equipment is required by 10 CFR 73.55 by incorporation into the physical security plan. Additionally, some facilities elect to chain and lock selected valves to ensure positive position control. However, an emergency may require the configuration of the equipment to be changed quickly. If the emergency procedures and actions to provide quick access are inadequate, there is concern that equipment may not be immediately accessible if local operation is necessary in an emergency.

The two events described above indicate that the emergency provisions at some plants may not have been developed sufficiently to ensure timely access to essential equipment. The emergency provisions at both of the above plants have been upgraded as a result of their experiences. These provisions include changing the remote shutdown procedures to require the transfer of the necessary keys from the control room to the personnel at the remote panel at Limerick and the provision of additional means of access at Davis-Besse. The subject of access and equipment control has been addressed before (see past related correspondence) from the standpoint of emergency access. The need for security, radiological protection and the positive position control of valves has not diminished. However, it is suggested that licensees consider whether their personnel would have timely access to essential equipment during an emergency. Such consideration might include whether:

1. The emergency procedures have been reviewed and updated to ensure that they provide adequate information to facilitate safe, rapid access to high radiation, vital areas and operational equipment during emergencies.
2. The necessary keys, cards, or other means of access are available for all foreseeable emergencies, while still maintaining adequate access control.
3. Training and drills in the use of emergency access provisions have been conducted for essential plant personnel. (Personal safety in high radiation areas should be addressed in the training.)
4. Breakable seals with appropriate periodic verification could be used as a way to detect tampering with or inadvertent manipulation of essential equipment, instead of chains and locks.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.

  
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and Engineering Response  
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Attachment: List of Recently Issued IE Information Notices

LIST OF RECENTLY ISSUED  
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
86-54	Criminal Prosecution Of A Former Radiation Safety Officer Who Willfully Directed An Unqualified Individual To Perform Radiography	6/27/86	All holders of by-product, source, or special nuclear material
86-53	Improper Use Of Heat Shrinkable Tubing	6/26/86	All power reactor facilities holding an OL or CP
86-52	Conductor Insulation Degradation On Foxboro Model E Controllers	6/26/86	All power reactor facilities holding an OL or CP
86-51	Excessive Pneumatic Leakage In The Automatic Depressurization System	6/18/86	All BWR facilities holding an OL or CP
86-50	Inadequate Testing To Detect Failures Of Safety-Related Pneumatic Components Or Systems	6/18/86	All power reactor facilities holding an OL or CP
86-49	Age/Environment Induced Electrical Cable Failures	6/16/86	All power reactor facilities holding an OL or CP
86-48	Inadequate Testing Of Boron Solution Concentration In The Standby Liquid Control System	6/13/86	All BWR facilities holding an OL or CP
86-47	Feedwater Transient With Partial Failure Of The Reactor Scram System	6/9/86	All BWRs and PWRs facilities holding an OL or CP
86-46	Improper Cleaning And Decontamination Of Respiratory Protection Equipment	6/12/86	All power reactor facilities holding an OL or CP and fuel fabrication facilities

OL = Operating License  
CP = Construction Permit