



## **DESCRIPTION OF CIRCUMSTANCES**

The findings detailed below (additional findings included as an attachment) represent various weaknesses in respiratory protection programs that the NRC identified subsequent to distribution of information notices discussed below.

### Missing SCBA Spectacle Kit at Clinton Power Station

On May 12, 2011, during an observation of SCBA maintenance inspection activities in the control room, the inspectors identified that one of the operating shift crew who wore eyeglasses did not have a corrective lens kit in the designated storage location. A licensee investigation determined that the missing spectacle kit was the result of a program weakness. Specifically, the process used for establishing the medical readiness of control room operators did not ensure operators had received SCBA corrective lens inserts before assuming watch responsibilities.

Additional information appears in Clinton Power Station, NRC Integrated Inspection Report 05000461/2011-004, dated November 3, 2011, available on the NRC's public Web site in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML11308A056.

### Failure to Provide Adequate SCBA Respirator Masks at Columbia Generating Station

During an inspection completed on July 23, 2009, NRC inspectors evaluated the adequacy of SCBA units staged in the control room for emergency use. The licensee staged six SCBA units for emergency use. The units contained medium respirator masks. On top of the units were staged one small mask, one large mask, and one extra-large respirator mask. NRC inspectors identified that three of the licensed control room operators on the day shift on July 22, 2009, were fit-tested for small respirator masks. In the event of an emergency requiring immediate respiratory protection, two of the three licensed operators who were fit-tested in small respirator masks would not have been qualified to use the pre-staged SCBA equipment and may have been unable to function in the event the control room became uninhabitable.

Additional information appears in Columbia Generating Station—NRC Radiation Safety Team Inspection Report 05000397/2009009, dated September 15, 2009, on the NRC's public Web site in ADAMS under Accession No. ML092600874.

### Expired SCBA Qualifications at Diablo Canyon Power Plant

On August 7 through 9, 2011, an operator filled an on-shift emergency response organization position for three consecutive shifts with expired SCBA respiratory protection qualifications. The licensee did not ensure the operator obtained the proper requalification training, an action that did not provide the emergency worker the full range of available protective actions as specified in 10 CFR 50.47(b)(10). Although the licensee was aware that the operator's respiratory qualification had expired, the operator's supervisor determined that the licensee met its technical specification minimum complement of qualified operators and considered that the minimum emergency response organization complement did not require respiratory qualification. The Diablo Canyon technical specification required number of operators is less

than the Emergency Plan required number of operators. The licensee's determination was in error because the required minimum of emergency response organization on-shift staff personnel is required to respond to all emergencies and, therefore, requires that staff members be fully qualified for their response functions.

Additional information appears in Diablo Canyon Power Plant—NRC Integrated Inspection Report 05000275/2011004 and 05000323/2011004, dated November 18, 2011, on the NRC's public Web site in ADAMS under Accession No. ML113220067.

#### Failure to Properly Test and Maintain SCBA Bottles at Quad Cities Nuclear Power Station

During walkdowns of in-service SCBA equipment on February 8, 2007, the inspectors identified that several SCBA air bottles did not have current hydrostatic tests. The SCBA equipment was strategically located in various areas of the plant to support emergency response activities including the main control room. Following the inspectors identification of the problem, the licensee determined that approximately 12 percent of the SCBA air bottles (26 bottles) in the station's in-service inventory had not been tested for periods ranging from just over 3 years up to nearly 7 years. According to the licensee's preliminary evaluation, the bottles were acquired in 2001 and placed into service without the knowledge of the radiation protection staff responsible for SCBA equipment inspection. Consequently, those particular bottles were not tracked as part of the licensee's bottle inventory. While the licensee performed monthly inspections of all in-service SCBA equipment, including all air bottles, those inspections failed to identify the problem because the procedure governing the inspection activity did not require that bottles be checked to ensure current hydrostatic testing.

Additional information appears in Quad Cities Nuclear Power Station, Units 1 and 2, NRC Integrated Inspection Report 05000254/2007002 and 05000265/2007002, dated May 3, 2007, on the NRC's public Web site in ADAMS under Accession No. ML071230732.

#### **BACKGROUND**

Self-contained breathing apparatuses (SCBAs) are used in the event the control room operators, who are key responders identified in the emergency plan, must perform licensed duties while wearing respiratory protection during certain postulated accidents. As such, SCBAs must be properly maintained and accessible to trained individuals in the event of an emergency that requires respiratory protection.

The NRC issued Information Notice 98-20, "Problems with Emergency Preparedness Respiratory Protection Programs," on June 3, 1998. That notice informed licensees of various weaknesses in licensee respiratory protection programs, including but not limited to the various weaknesses that are reemphasized in this IN. Specifically, this IN addresses recurring problems relating to the availability of corrective lenses, availability of masks in the proper sizes, manufacturer-specified maintenance and testing, as well as appropriate licensed operator training.

In addition, the NRC issued Information Notice 97-66, "Failure to Provide Special Lenses for Operators Using Respirator or Self-Contained Breathing Apparatus during Emergency Operations," on August 20, 1997, to address the accessibility of SCBA to licensed operators during emergency response.

## **DISCUSSION**

The NRC requires licensees to comply with 10 CFR 50.54(b)(10), which states, in part, that a licensee must provide adequate protective measures for emergency workers. Each of the above descriptions (and those included in the attachment) resulted in a violation of NRC regulations.

The NRC has consistently dispositioned inadequate controls of accessibility, training, and maintenance of SCBAs as more than minor safety significance. SCBAs are an integral piece of emergency response equipment for radiological and oxygen deficient atmospheres. As such, SCBAs are an integral piece of safety equipment for Fire Protection Plans and Emergency Response Plans. They are used extensively by Onsite Fire Brigades for immediate fire-fighting response and emergency workers for radiological protection. When they cannot provide adequate personnel protection, a degradation of emergency response is likely to occur and the consequences could be life-threatening. The examples used in this IN, that have all been cited following the release of IN 98-20, detail the varied nature of issues that have been identified related to respiratory protection programs. The NRC believes that the nature of these findings may be indicative of an ongoing trend that was not adequately addressed following the publication of the previous INs.

This IN informs licensees that they may benefit from further evaluating the adequacy of controls for their respiratory protection program. Regulations in 10 CFR 20.1703, "Use of Individual Respiratory Protection Equipment," require, in part, that each worker that may be required to wear an SCBA be fit tested and properly trained. It is important that licensees maintain current and comprehensive oversight. A strong oversight program would ensure not only that each worker is appropriately fit tested, trained, and qualified, but also that respirator mask sizes are staged and available to meet any potential demand, and that corrective lens kits are available at all times to all users who require them. A strong oversight program would also ensure that each piece of equipment is systematically tested and maintained in accordance with guidelines agreed to by the manufacturer and licensee.

## CONTACTS

This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contact listed below or the appropriate NRC project manager.

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## **Additional Findings**

### **Operators Did Not Have Corrective Lens Kits Available to Implement Emergency Plan Requirements at Ginna Nuclear Power Plant**

Information available in Ginna Nuclear Power Plant—U.S. Nuclear Regulatory Commission (NRC) Integrated Inspection Report 05000244/2009003, dated July 27, 2009, on the NRC's public Web site in Agencywide Documents Access and Management System (ADAMS) under Accession No. ML092080369.

### **Failure to Provide Proper Size Respirator Masks for Respiratory Protection at H.B. Robinson**

Information available in H.B. Robinson Steam Electric Plant—NRC Integrated Inspection Report 05000261/2007002, dated April 20, 2007, on the NRC's public Web site in ADAMS under Accession No. ML071100293.

### **Failure to Perform Air Quality Test for Compressors Used to Supply Emergency Preparedness SCBA Breathing Air Tanks at Watts Bar**

Information available in Watts Bar Nuclear Plant—NRC Integrated Inspection Reports 05000390/2006003 and 05000391/2006003, dated July 25, 2006, on the NRC's public Web site in ADAMS under Accession No. ML062060218.

### **SCBA Training Procedure Did Not Require Users To Demonstrate Changing Bottles at Edwin I. Hatch**

Information available in Edwin I. Hatch Nuclear Power Plant—NRC Integrated Inspection Reports 50-321/02-03 and 50-366/02-03, dated July 26, 2002, on the NRC's public Web site in ADAMS under Accession No. ML022100427.