

## Cotton, Karen

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**From:** Gary D Miller [gary.d.miller@dom.com]  
**Sent:** Monday, November 02, 2009 1:54 PM  
**To:** Cotton, Karen  
**Subject:** Revised TS pages missing from LAs 266/265 - Deletion of MCR/ESGR Bottled Air TS Requirements  
**Attachments:** img-Y021405-0001.pdf

Karen,

As noted during our earlier phone call this date, I reviewed License Amendments (LAs) 266/265, issued by the NRC on October 29, 2009 for Surry Units 1 and 2, respectively, to delete the MCR/ESGR Bottled Air TS Requirements. During my review, I noticed that the LAs do not include revised TS pages TS 3.21-2, 3.21-3, 4.1-5, 4.1-9c (TS Table 4.1-2A) and 6.4-14 that were included in Dominion's October 8, 2009 LAR as marked-up and typed TS pages in Attachments 2 and 3, respectively. In addition, the page included in the NRC's LA transmittal letter that provides the TS page replacement directions does not include these pages either. Also, neither the NRC's cover letter nor the attached Safety Evaluation Report mention the supporting changes to the TS 3.21 and 4.1 Basis sections. (This may be due to their being Basis changes as opposed to actual TS changes.)

The TS pages missing from the October 29, 2009 License Amendments are attached. Please advise regarding how/when this issue can be corrected.

Thanks.

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BASES

BACKGROUND - The MCR/ESGR Emergency Ventilation System (EVS) provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke.

The MCR/ESGR EVS consists of four full capacity trains that supply filtered air to the MCR/ESGR envelope and a MCR/ESGR envelope boundary that limits the inleakage of unfiltered air. Each MCR/ESGR EVS train consists of a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves, dampers, doors, barriers, and instrumentation also form part of the system. One EVS train is capable of performing the safety function of providing outside filtered air for pressurization. Two independently powered EVS trains are required for independence and redundancy.

The MCR/ESGR envelope is the area within the confines of the MCR/ESGR envelope boundary that contains the spaces that control room occupants inhabit to control the unit during normal and accident conditions. This area encompasses the common Main Control Room and the Emergency Switchgear Rooms, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident. The MCR/ESGR envelope is protected during normal operation, natural events, and accident conditions. The MCR/ESGR envelope boundary is the combination of walls, floor, roof, ducting, doors, penetrations and equipment that physically form the MCR/ESGR envelope. The OPERABILITY of the MCR/ESGR envelope boundary must be maintained to ensure that the inleakage of unfiltered air into the MCR/ESGR envelope will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to MCR/ESGR envelope occupants. The MCR/ESGR envelope and its boundary are defined in the MCR/ESGR Envelope Habitability Program (TS 6.4.R).

Upon receipt of the actuating signal(s), normal air supply to and exhaust from the MCR/ESGR envelope is isolated. Two dampers in series in both the MCR/ESGR envelope supply and exhaust ducts close to isolate the MCR/ESGR envelope. Approximately 60 minutes after the isolation of the MCR/ESGR envelope, the MCR/ESGR EVS is manually actuated. Each MCR/ESGR EVS train provides filtered air from the Turbine Building to the MCR/ESGR envelope through HEPA filters and charcoal adsorbers. Prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers.

Pressurization of the MCR/ESGR envelope, although not required by the accident analyses, limits infiltration of unfiltered air from the surrounding areas adjacent to the MCR/ESGR envelope.

A single train of the MCR/ESGR EVS will pressurize the MCR/ESGR envelope to about 0.05 inches water gauge relative to external areas adjacent to the MCR/ESGR envelope boundary. The MCR/ESGR EVS operation in maintaining the MCR/ESGR envelope habitable is discussed in the UFSAR, Section 9.13 (Ref. 3).

Redundant MCR/ESGR EVS supply trains provide pressurization and filtration should one train fail to start or should an excessive pressure drop develop across the operating filter train. Isolation dampers are arranged in series pairs so that the failure of one damper to shut will not result in a breach of isolation. The MCR/ESGR EVS is designed in accordance with Seismic Category I requirements.

The MCR/ESGR EVS is designed to maintain a habitable environment in the MCR/ESGR envelope for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem total effective dose equivalent (TEDE).

APPLICABLE SAFETY ANALYSES - The MCR/ESGR EVS components are arranged in redundant, safety related ventilation trains. The MCR/ESGR EVS provides airborne radiological protection for the MCR/ESGR envelope occupants, as demonstrated by the MCR/ESGR envelope occupant dose analyses for the most limiting design basis accident fission product release presented in the UFSAR, Chapter 14 (Ref. 4).

The MCR/ESGR EVS provides protection from smoke and hazardous chemicals to the MCR/ESGR envelope occupants. An evaluation of hazardous chemical releases demonstrates that the toxicity limits for chemicals are not exceeded in the MCR/ESGR envelope following a hazardous chemical release (Refs. 1 and 5) or that ample time is available for MCR/ESGR envelope occupants to isolate the MCR/ESGR envelope. The evaluation of a smoke challenge demonstrates that it will not result in the inability of the MCR/ESGR envelope occupants to control the reactor either from the MCR or from the remote shutdown panel (Ref. 2).

The worst case single active failure of a component of the MCR/ESGR EVS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The MCR/ESGR EVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LIMITING CONDITIONS FOR OPERATION (LCO) - Two independent and redundant MCR/ESGR EVS trains are required to be OPERABLE to ensure that at least one is available to pressurize and to provide filtered air to the MCR/ESGR envelope assuming a single active failure disables one of the two required trains. Due to electrical power considerations, one train must be from the other unit. Total system failure, such as from a loss of both ventilation trains or from an inoperable MCR/ESGR envelope boundary, could result in exceeding a dose of 5 rem TEDE to the MCR/ESGR envelope occupants in the event of a large radioactive release.

The refueling water storage tank is sampled weekly for  $\text{Cl}^-$  and/or  $\text{F}^-$  contaminations. Weekly sampling is adequate to detect any inleakage of contaminated water.

Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Isolation Actuation Instrumentation

The MCR/ESGR Envelope Isolation Actuation function provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity. A functional check of the Manual Actuation function is performed every 18 months. The test frequency is based on the known reliability of the function and the redundancy available and has been shown to be acceptable through operating experience. The Surveillance Requirement will ensure that the two trains of the MCR/ESGR envelope isolation dampers close upon manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation and that the supply and exhaust fans in the normal ventilation system for the MCR/ESGR envelope shut down, as well as adjacent area ventilation fans. Automatic actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation is confirmed as part of the Logic Channel Testing for the Safety Injection system.

Pressurizer PORV, PORV Block Valve, and PORV Backup Air Supply

The safety-related, seismic PORV backup air supply is relied upon for two functions - mitigation of a design basis steam generator tube rupture accident and low temperature overpressure protection (LTOP) of the reactor vessel during startup and shutdown. The surveillance criteria are based upon the more limiting requirements for the backup air supply (i.e. more PORV cycles potentially required to perform the mitigation function), which are associated with the LTOP function.

The PORV backup air supply system is provided with a calibrated alarm for low air pressure. The alarm is located in the control room. Failures such as regulator drift and air leaks which result in low pressure can be easily recognized by alarm or annunciator action. A periodic quarterly verification of air pressure against the surveillance limit supplements this type of built-in surveillance. Based on experience in operation, the minimum checking frequencies set forth are deemed adequate.

TABLE 4.1-2A (CONTINUED)  
MINIMUM FREQUENCY FOR EQUIPMENT TESTS

<u>DESCRIPTION</u>	<u>TEST</u>	<u>FREQUENCY</u>	<u>FSAR SECTION REFERENCE</u>
14a. Service Water System Valves in Line Supplying Recirculation Spray Heat Exchangers	Functional	Once per 18 months	9.9
b. Service Water System Valves Isolating Flow to Non-essential loads on Intake Canal Low Level Isolation	Functional	Once per 18 months	9.9
15. MCR/ESGR Envelope Isolation Actuation Instrumentation - Manual	Functional	Once per 18 months	9.13
16. Reactor Vessel Overpressure Mitigating System (except backup air supply)	Functional & Setpoint	Prior to decreasing RCS temperature below 350°F and monthly while the RCS is < 350°F and the Reactor Vessel Head is bolted	4.3
	CHANNEL CALIBRATION	Once per 18 months	
17. Reactor Vessel Overpressure Mitigating System Backup Air Supply	Setpoint	Once per 18 months	4.3
18. Power-Operated Relief Valve Control System	Functional, excluding valve actuation	Monthly	4.3
	CHANNEL CALIBRATION	Once per 18 months	

Amendment Nos.

TS 4.1-9c

R. Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program

A Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program shall be established and implemented to ensure that MCR/ESGR envelope habitability is maintained such that, with an OPERABLE MCR/ESGR Emergency Ventilation System (EVS), MCR/ESGR envelope occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the MCR/ESGR envelope under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

1. The definition of the MCR/ESGR envelope and the MCR/ESGR envelope boundary.
2. Requirements for maintaining the MCR/ESGR envelope boundary in its design condition including configuration control and preventive maintenance.
3. Requirements for (a) determining the unfiltered air inleakage past the MCR/ESGR envelope boundary into the MCR/ESGR envelope in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (b) assessing MCR/ESGR envelope habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

The following is an exception to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

- 2.C.1 Licensing Bases - Vulnerability assessments for radiological, hazardous chemical and smoke, and emergency ventilation system testing were completed as documented in the UFSAR. The exceptions to the Regulatory Guides (RGs) referenced in RG 1.196 (i.e., RG 1.52, RG 1.78 and RG 1.183), which were considered in completing the vulnerability assessments, are documented in the UFSAR/current licensing basis. Compliance with these RGs is consistent with the current licensing basis as described in the UFSAR.