

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261
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U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
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NLOS/TJS R1
Docket Nos. 50-280, 281
50-338, 339
License Nos. DPR- 32, 37
NPF- 4, 7

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNITS 1 AND 2
SURRY POWER STATION UNITS 1 AND 2
RESPIRATORY PROTECTION EQUIPMENT AUTHORIZATION AND ASSOCIATED
EXEMPTION REQUESTS

Pursuant to Title 10 CFR Part 20.1703(b), Virginia Electric and Power Company (Dominion) hereby requests authorization to use Mine Safety Appliance Company (MSA) Firehawk Air Mask (FireHawk) Self-Contained Breathing Apparatus (SCBA) charged with 35% oxygen / 65% nitrogen (35/65) when making sub-atmospheric containment entries at North Anna and Surry Power Stations (NAPS and SPS). Additionally, Dominion requests exemptions per 10 CFR Part 20.2301 associated with 10 CFR Part 20.1703(a), 20.1703(g) and Appendix A, Footnote "a" to 10 CFR Part 20. These exemptions are necessary to support the above authorization request in that the use of supplemental oxygen in the selected SCBA has not been tested / certified by National Institute of Occupational Safety and Health (NIOSH).

NAPS and SPS have sub-atmospheric containments. Personnel entries into sub-atmospheric containments generally require supplemental oxygen. Dominion has historically chosen open-circuit, pressure-demand SCBA charged with 35/65 to supply the supplemental oxygen. The use of supplemental oxygen in SCBA at NAPS and SPS was approved by NRC Safety Evaluation Reports issued for NAPS on July 31, 1998 (Serial No. 98-473) and for SPS on September 3, 1998 (Serial No. 98-565). These NRC-approved SCBA have been scheduled for phase-out by their manufacturer (i.e., MSA). Dominion has chosen the next generation MSA SCBA (i.e., the Firehawk) as replacement equipment. In support of the above authorization and exemption requests, Dominion contracted with the National Aeronautics and Space Administration (NASA) and Intertek Testing Services NA, Inc. (Intertek) to have the FireHawk tested to confirm the compatibility of its materials and design with 35/65 charging and thereby demonstrate the equipment is capable of providing the proposed degree of protection under the anticipated conditions of use. Attachment 1 contains relevant information supporting our authorization and exemption requests. Attachments 2 and 3 contain the third-party testing results from NASA and Intertek respectively.

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Current plans call for the phase-out of manufacturer support for our current SCBA during 2009 – 2010. To support the planning, purchase, and integration of the new MSA Firehawk equipment at both NAPS and SPS, Dominion requests approval of the authorization and exemption requests by March 30, 2010.

Should you have any questions regarding the information supplied, please contact Mr. Thomas Szymanski at (804) 273-3065.

Sincerely,



Leslie N. Hartz
Vice President - Nuclear Support Services

Attachments

Commitments made by this letter: None

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ATTACHMENT 1

SCBA AUTHORIZATION AND EXEMPTION REQUEST:
SUPPORTING INFORMATION

NORTH ANNA AND SURRY POWER STATIONS – UNITS 1 & 2
VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)

SCBA AUTHORIZATION AND EXEMPTION REQUEST:
SUPPORTING INFORMATION

Regulatory Summary

10 CFR 20, Subpart H – Respiratory Protection and Controls To Restrict Internal Exposure in Restricted Areas, 20.1703(b) specifies that licensees who wish to use equipment that has not been tested and certified by the National Institute for Occupational Safety and Health (NIOSH) submit an application to the NRC for authorized use of the equipment. The application must include evidence that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use as demonstrated by either licensee testing or other reliable test information.

In this regard, Virginia Electric and Power Company (Dominion) seeks specific authorization to use Mine Safety Appliance Company (MSA) FireHawk Air Mask (FireHawk) Self-Contained Breathing Apparatus (SCBA) charged with 35% oxygen and 65% nitrogen (35/65) when making sub-atmospheric containment entries at North Anna and Surry Power Stations (NAPS and SPS). The specifics of this request are detailed in the balance of this attachment. As required by 20.1703(b), proof that the requested equipment authorization will continue to provide adequate protection under anticipated conditions of use is supplied both by reliable third-party testing (Attachments 2 and 3) and Dominion's 30-year use history with 35/65 charged SCBA during which no incidents of oxygen induced failure or equipment maintenance problems associated with enriched oxygen operation have been recorded.

Associated with the above authorization request, Dominion also seeks exemptions pursuant to 10 CFR 20.2301 from certain Part 20 regulations as they relate to requirements that respiratory protection equipment used to protect against radiological hazards be NIOSH certified. (These exemptions are required because the requested authorization to use 35/65 in the FireHawk voids the equipment's NIOSH certification which is based on Grade D or better air being supplied to the user.) Specifically, Dominion requests exemptions from 10 CFR 20.1703(a) which requires NIOSH approved respiratory protection equipment, 20.1703(g)(1) which requires SCBA be charged with Grade D or better air containing 19.5 – 23.5% oxygen, and Appendix A to Part 20 – Assigned Protection Factors for Respirators, footnote "a" which specifies that Assigned Protection Factors (APFs) only apply to programs that meet the requirements of Part 20. The specifics of these exemption requests are further detailed in the balance of this attachment.

10 CFR 50, Appendix R, Section III, Paragraph H, also requires full-face respiratory protection equipment used for emergencies be certified by NIOSH. However, Dominion's North Anna and Surry Power Stations are not committed to Paragraph H in their Appendix R Reports. Dominion, therefore, does not seek exemption from this regulation.

A Memorandum of Understanding (MOU)¹ exists between the NRC and the Occupational Safety and Health Administration (OSHA) which clarifies agency responsibilities for worker safety and health at NRC-licensed facilities. Generally, the NRC is responsible for facility conditions that affect the safety of radioactive materials and thus present an increased radiation risk to workers. NAPS and SPS's sub-atmospheric containments meet this criterion. Dominion cites this MOU, and past history discussing sub-atmospheric containment environments with both agencies, as reason to again request authorization and exemptions to use 35/65-charged SCBA from the NRC under 10 CFR Part 20 (as opposed to seeking 29 CFR Part 1910 redress with OSHA). Dominion's position is further supported by NUREG/CR-0041² which notes that when a licensee continues to take credit for protection against airborne radioactive material even if the respirators are worn for industrial purposes, then the licensee must also comply with the applicable Subpart H rules. In seeking appropriate NRC authorization and exemptions as described above, Dominion views full 10 CFR Part 20, Subpart H compliance as being consistent with all applicable OSHA requirements. Dominion will, therefore, not be requesting any exemptions of 29 CFR Part 1910 regulations from OSHA.

Background Information

Containment Conditions

The containments at both NAPS and SPS are designed to be maintained at sub-atmospheric pressure during power operations. The containment environment varies with time of year and unit load, but Technical Specifications limit containment pressure to a minimum value of 10.1 pounds per square inch absolute (psia) at SPS. (The NAPS limit is 10.3 psia.) Additionally localized air temperatures in containment may reach a weighted average maximum of 125° F at SPS. The NAPS limit is 115° F with relative humidity approaching 90% for both plants.

It is periodically necessary for personnel to enter containment while the units are operating to perform inspections and/or maintenance. The impact of the above described environment on personnel safety was assessed during the mid-1970s. Heat stress management techniques (e.g., stay times, fluid consumption, cooling garments) were adopted from general industry experience at that time and, with appropriate modifications, are still in use today. However, the other main containment stress, oxygen deficiency due to reduced pressure, requires the use of supplemental oxygen.

Oxygen Deficiency

Oxygen deficiency can be caused by a reduction of the percent by volume of oxygen in an atmosphere or by a reduction of the total atmospheric pressure. The effect on the body in both cases is the same; a reduction in the partial pressure of oxygen available to the exposed individual. Specifically, in the case of NAPS and SPS sub-atmospheric containments, the percentage oxygen does not decrease from the normally available 20.95%, but the oxygen partial pressure does decrease due to the reduction in the total pressure of the containment atmospheres. Since no time for acclimation is practically available (several weeks would be required for full acclimatization), personnel entering containment are susceptible to physiological problems caused by rapidly lowered oxygen partial pressure (e.g., dizziness, shortness of breath, impaired decision making, loss of fine muscle control, etc.). The extent to which these symptoms affect specific individual performance is difficult to predict, but some degree of impairment is expected in most, if not all, personnel. For this reason, Dominion requires supplemental oxygen for most sub-atmospheric containment entries. (Rare, short-duration exceptions are allowed under some circumstances such as when the SCBA gear restricts access to target equipment in containment.)

Numerous references are available to evaluate oxygen deficiency. Dominion's authorization request covering our current MSA Model 401/Ultralite/Custom 4500 35/65 SCBA³ was based primarily on ANSI Z88.2-1980, Practices for Respiratory Protection, guidance. Since that submittal, this ANSI standard has been updated to ANSI Z.88.2-1992⁴, American National Standard for Respiratory Protection. US NRC Regulatory Guide 8.15⁵, Acceptable Programs for Respiratory Protection contains valuable guidance on non-NIOSH certified equipment and supporting information on several related topics (e.g., training, OSHA perspective). NUREG/CR-0041, Manual of Respiratory Protection Against Airborne Radioactive Material⁶ contains specific information on both oxygen deficiency and sub-atmospheric containments. For this reason, and because it is the most recently published document, Dominion has relied predominantly on guidance from NUREG/CR-0041 to assess our current containment conditions. (This decision does not exclude ANSI Z88.2, Revision 1980 or 1992, or Regulatory Guide 8.15 guidance in any material way in that all of these guidance documents generally agree.)

(NOTE: Dominion acknowledges that NUREG/CR-0041 guidance on sub-atmospheric atmospheres is based on Dominion's own experience. However, given that 1) Dominion has experienced essentially no problems using 35/65 SCBA at NAPS and SPS for over 30 years and 2) NUREG/CR-0041 is peer reviewed, the guidance is no less applicable or valid.)

NUREG/CR-0041, Section 6.13, Oxygen-Deficient Environments, contains an excellent summary of the topic. Oxygen deficient situations are categorized as Immediately Dangerous to Life and Health (IDLH) or non-IDLH. Oxygen deficient – IDLH atmospheres include situations where a confined space has less than the normal 20.95% oxygen concentration for unexplained reasons, those that contain less than the equivalent of 12.5% oxygen at sea level, and atmospheric total pressures less than 8.6 psia. Dominion's NAPS and SPS sub-atmospheric containment atmospheres never meet these criteria and are therefore never oxygen deficient – IDLH.

Oxygen deficient non-IDLH atmospheres can be the result of reduced oxygen percentage or reduced atmospheric pressure. As explained earlier, NAPS and SPS containments are operated at reduced atmospheric pressures down to 10.1 psia with oxygen percentage unchanged from the normal 20.95%. Using NUREG/CR-0041, Appendix F, Oxygen Deficiency and the Relationship Between Percent O₂ and Elevation (Attachment 4), and Dominion's variables of 10.1 psia and 20.95% oxygen, yields a mid-band oxygen deficient non-IDLH atmosphere. (As noted earlier, NAPS and SPS containment pressures vary with service water temperature which in turn is influenced by time of year ambient temperatures. 10.1 psia is the lowest containment pressure allowed by Technical Specifications for SPS. In practice, both NAPS and SPS operate at higher pressures than 10.1 psia, but still generally in the oxygen deficient non-IDLH band as shown on Attachment 4. 10.1 psia bounds the "worst case scenario" situation for purposes of conservatively assessing Dominion's oxygen deficiency hazard.)

Equipment Selection / Use History

Two SCBA types are available to furnish additional oxygen during sub-atmospheric containment entries; open-circuit and closed circuit. Each SCBA type has its associated advantages and disadvantages. Dominion has used open-circuit SCBA for making containment entries for 30 years and is comfortable and confident with their use and performance. When the manufacturer of our currently used line of open-circuit SCBA (i.e., MSA's Model 401/Ultralite/Custom 4500) announced their plans to discontinue manufacture and support of the line, Dominion reassessed its options and concluded that staying with open-circuit SCBA charged with 35/65 was preferred. Due to numerous factors (e.g., familiarity with equipment, use of the MSA FireHawk by other Dominion facilities, MSA reputation and work history, equipment reliability, and FireHawk selection as Dominion fire-fighting SCBA), Dominion selected the new MSA FireHawk with a wide-view Ultra Elite facepiece. The FireHawk is a NIOSH-approved, National Fire Protection Association (NFPA)-compliant, state-of-the-art SCBA featuring many new features which enhance its safety, simplicity and reliability.

The MSA FireHawk is a positive-pressure, open-circuit SCBA. Like all open circuit SCBA, the Firehawk's regulator reacts to ambient pressure to provide breathing air at a

pressure slightly above ambient. In a sub-atmospheric atmosphere, a FireHawk with Grade D air would supply insufficient oxygen to counter the reduced oxygen partial pressure present. Therefore, supplemental oxygen is required. The amount of supplemental oxygen that is required is calculated by dividing the partial pressure (pp)O₂ at sea level (760 mm Hg total multiplied by the O₂ concentration of 20.95%) by the atmospheric pressure in the workplace (at SPS: 10.1 psia or 522 mm Hg):

$$760 \text{ mmHg} \times 0.2095 / 522 \text{ mm Hg} = .305 \text{ or } \sim 31\% \text{ O}_2$$

Therefore, given Dominion containment pressures, 31% oxygen would assure the SCBA user of having a sufficient amount to maintain normal bodily function. However, in order to also account for other oxygen concentration robbing mechanisms (e.g., re-circulation of exhaled breath, mask void spaces), and to maintain program consistency, Dominion has determined to maintain the requested authorization blend at 35% oxygen (with the balance 65% nitrogen). As this oxygen percentage voids the FireHawk's NIOSH certification, which is a NRC requirement, reliable testing is required per 10 CFR 20.1703(b) to prove the equipment, as altered, will continue to offer users adequate protection.

Testing

Background

When Dominion submitted an authorization request for the MSA Model 401/Ultralite/Custom 4500 line of SCBA, it contained test data from two third-party testing organizations. The National Aeronautics and Space Administration's (NASA) White Sands Test Facility (WSTF) assessed the compatibility of the SCBA with a 35/65 breathing gas mixture under routine use conditions. Lawrence Livermore National Laboratory (LLNL) assessed the performance of the 35/65-charged SCBA in a flame and heat environment intended to assess the SCBA's performance during potential fire-fighting situations. With this background, Dominion approached both organizations to assess the need to repeat these tests on the MSA FireHawk.

NASA's oxygen compatibility assessment process has evolved since Dominion last contracted their services. The accumulation of oxygen compatibility data from numerous sources has contributed to the drafting of a standard Oxygen Compatibility Assessment procedure which NASA can use to assess client materials / equipment in a standardized fashion. This evaluation can, in and of itself (i.e., without actual testing), assess material / equipment as likely safe or potentially hazardous. The evaluation may also recommend additional evaluations or testing be done before recommendations are provided. (Note: NASA's assessment addresses potential hazard.) Dominion contracted with NASA to provide an Oxygen Compatibility Assessment for the MSA FireHawk SCBA charged with 35/65.

LLNL no longer conducts flame and heat evaluations. The testing rig used to assess SCBA compliance with NFPA 1981, Standard on Open Circuit SCBA for Emergency Services⁷, was sold to Intertek Testing Services NA, Inc. (Intertek). Dominion contracted with Intertek to provide a flame and heat test for the MSA FireHawk charged with 35/65.

NASA Oxygen Compatibility Assessment Report

Attachment 2 contains the entire NASA Oxygen Compatibility Report. Please reference this attachment as necessary for specific details relating to the summary below.

NASA's evaluation involved the compilation of equipment construction and use parameters from both MSA and Dominion. Specifically, information was considered concerning materials of construction, flow paths, equipment maintenance, and use conditions as bounded by worst-case scenarios. (Note: Attachment 2, NASA Report, Page 3, Section 3.0 erroneously lists a maximum NAPS containment temperature of 105 deg F. The actual value of 115 deg F is bounded by the Report's use of the SPS containment temperature maximum of 125 deg F.) This information was fed into the consideration of material flammability. Next, an ignition mechanism survey was performed. Each ignition mechanism (e.g., frictional heating, rapid pressurization, particle impact) was evaluated to determine its respective likelihood (on a scale from not possible to highly probable) of occurring. A reaction assessment was then performed to determine the effects of ignition on personnel, mission and system objectives (on a scale ranging from negligible to catastrophic). Finally, the entire system was assessed as to its individual components' ability to contain a fire.

NASA concluded that with implementation of recommendations concerning hydrocarbon contamination, valve and regulator maintenance / operation (Dominion already complies with these recommendations), "there are no fire hazards associated with the use of this equipment."

Intertek Heat and Flame Assessment

Dominion obtained a new FireHawk SCBA from MSA and charged it with 35/65 at SPS. This SCBA was then sent to Intertek to have a Heat and Flame Resistance test performed per NFPA 1981. The tested SCBA used a fully pressurized 4500 psig cylinder so as to bound all Dominion applications (i.e., low and high pressure) and was equipped with a HYCAR rubber Ultra Elite facepiece. (Note: Silicone facepieces fail Chemical, Biological, Radiological, Nuclear (CBRN) testing and were therefore not considered by Dominion for use due to site fire and security commonality considerations.) The Heat and Flame Test evaluated SCBA performance in a typical

fire-fighting thermal and flashover environment while being operated at high breathing rates.

Intertek testing of the Dominion supplied MSA FireHawk charged with 35/65 was successful as indicated by passing each required test criterion (see Attachment 3).

Breathing Gas Mixture

The 35/65 mixture used at NAPS and SPS is purchased from a vendor. Strict controls are applied by the vendor during manufacture of the mixture which is done by reconstitution of medical grade liquid oxygen and liquid nitrogen. The vendor is required by purchase order to certify that the oxygen used to produce the breathing gas mixture meets the specifications defined in the latest revision of The United States Pharmacopeia (USP) – The National Formulary (NF). The nitrogen used must meet the specifications defined in the NF. Additionally, the oxygen and nitrogen constituents must be within two percent of the specified volume percentages.

Vendor supplied bulk 35/65 mixtures are transferred to dedicated SCBA cylinders using dedicated cascade systems or transfer pumps. The cylinder charging systems are specifically designed for transferring respirable gases and are operated by trained personnel in accordance with approved station procedures.

Maintenance

SCBA are maintained at NAPS and SPS by station personnel qualified by MSA under their Certified Air Mask Repair Education (C.A.R.E.) program. Under the C.A.R.E. program, work on all Dominion FireHawk SCBA, 35/65 or compressed air charged, requires MSA mask-mounted regulator certification. SCBA designated for containment use (i.e., charged with 35/65) are, and will continue to be, segregated and controlled to ensure no inadvertent exchange of pressure boundary parts with compressed air units. This is done as a further precaution against any possible hydrocarbon contamination reaching the 35/65 SCBA pressure boundary internals (although compressed air SCBA internals are also maintained without the use of any hydrocarbons per MSA guidance).

(Note: Dominion's original authorization request discussed the different potential hazards posed by brass versus aluminum SCBA components. This discussion was pertinent because MSA was at the time changing several components from less reactive brass to more reactive 6061 aluminum. NASA testing done at that time proved that 6061 aluminum was safe for use under our conditions. Dominion postulated at that time that chronic degradation of 6061 aluminum in a 35% oxygen environment would not be a problem. That assumption has proven true. No maintenance problems associated with the use of 35/65 SCBA equipped with aluminum parts have been noted in over 10 years of use.)

Training

Personnel who use SCBA (35/65 or compressed air) are provided specific training on their proper operation. SCBA user training is a separate course of instruction taken, as required, post basic Respiratory Protection Training. This instruction includes review of appropriate actions to be taken in the event of an emergency or equipment malfunction. (Station procedures also address sub-atmospheric containment work including emergency actions.) Testing is employed, including demonstrations, to increase training effectiveness. Retraining is required to maintain SCBA user qualification.

Medical Qualification

Dominion requires annual respiratory physicals be performed under the direct supervision of a licensed physician. The first step in this process is the completion of a detailed medical history form. The information on this form, in conjunction with any follow-up questions and the actual physical examination, supply the necessary information for the physician to make decisions concerning each employee's ability to enter containment. If temporary or permanent containment restriction is indicated, it is done at this time.

Restriction from containment entry due to inability to wear SCBA for medical reasons is rare. It is more common to be excluded from containment due to overall health conditions that would be aggravated by the containment environment itself (e.g., high temperature, sub-atmospheric pressure). Examples of these restricting health conditions include inner ear problems, heart conditions and muscle injuries.

Fit Testing

Dominion fit testing procedures specify a minimum fit factor of 1000 (i.e., a safety factor of 10 applied to a full facepiece, negative-pressure respirator). Additionally, Dominion does follow the guidance of ANSI Z88.2-1992 in requiring fit tests for all tight-fitting respirators worn regardless of mode (e.g., individuals are required to obtain a satisfactory fit test even if the only tight-fitting respirator they may be required to wear is a positive-pressure device such as an SCBA).

Dominion will be using the new MSA wide-view Ultra Elite facepiece with FireHawk SCBA. Because of CBRN considerations, the Flame and Heat testing done at Intertek used a HYCAR rubber facepiece. Therefore, 35/65 FireHawk SCBA at NAPS and SPS will be procedurally required to use HYCAR rubber Ultra Elite facepieces.

Emergency Use

Dominion intends, pending NRC approval, to allow the use of MSA FireHawk Air Mask SCBA charged with 35/65 for containment fire fighting. This application is consistent with past and current practice and was approved by the NRC for our current line of equipment (see References 8 / 9).

NASA's Oxygen Compatibility Assessment Report (Attachment 2) considered a maximum use temperature of 125° F. This temperature is the SPS Technical Specification containment limit (NAPS limit is 115° F). However, this is not an assessed maximum use temperature for emergency situations such as fire-fighting. The 125° F limit was considered solely for NASA's normal use assessment. For fire-fighting, the Intertek Heat and Flame testing (Attachment 3) is applicable. That testing was successful and therefore provides Dominion confidence that the FireHawk charged with 35/65 is safe for use as a containment fire-fighting SCBA.

10 CFR 20.2301 Requirements

10 CFR 20.2301 states that the Commission may, upon application by a licensee, grant an exemption from the requirements of the regulations of this part if it determines the exemption is 1) authorized by law and 2) would not result in undue hazard to life or property.

1. The requested exemption is authorized by law.

10 CFR 20.1703(b) permits a licensee to request NRC approval to use equipment which has not been tested or certified by NIOSH. The application must supply evidence that the equipment is capable of providing the proposed degree of protection under the anticipated conditions of use. This must be demonstrated either by licensee testing or on the basis of reliable test information. The MSA FireHawk SCBA is certified by NIOSH when charged with Grade D or better compressed air, but has not been tested / certified with supplemental oxygen (i.e., 35/65). Dominion has demonstrated by documented third-party testing (conducted by NASA and Intertek) that the equipment will continue to provide the proposed degree of protection under the anticipated conditions of use. Additionally, Dominion has over 30 years of trouble free operating experience with 35/65 charged SCBA (i.e., MSA Model 401/Ultralite/Custom 4500 model line) which supports our request.

2. The requested exemption does not present an undue hazard to life or property.

The third party testing (Attachments 2 and 3) conducted to support the exemptions requested supports the conclusion that MSA FireHawk SCBA charged with 35/65 are safe for use under both the normal and emergency conditions expected. No

undue risk to Dominion (or public) personnel or property is posed by the expected performance of the FireHawk as operated in accordance with the requested exemptions.

Request Summary

10 CFR 20, Subpart H – Respiratory Protection and Controls To Restrict Internal Exposure in Restricted Areas, 20.1703(b) specifies that licensees who wish to use equipment that has not been tested and certified by the National Institute for Occupational Safety and Health (NIOSH) submit an application to the NRC for authorized use of the equipment. The application must include evidence that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use as demonstrated by either licensee testing or other reliable test information. Dominion submits that the combination of formal testing completed at NASA and Intertek, our 30 year safe use history (with 35/65-charged SCBA) and the existing NIOSH certification for the MSA FireHawk SCBA (charged with Grade D or better breathing air) meet this regulatory requirement. Dominion therefore requests authorization to use the MSA FireHawk SCBA charged with 35/65 when entering sub-atmospheric containments at NAPS and SPS during both normal and emergency situations.

In support of the above authorization request, Dominion requests exemptions from 10 CFR 20.1703(a), 20.1703(g)(1), and Appendix A to Part 20 – Assigned Protection Factors for Respirators, footnote “a” in that these specific regulations require the use of NIOSH-certified respiratory protection equipment when the licensee wishes to take credit for the equipment’s Assigned Protection Factors. Since Dominion’s unique work environment (i.e., sub-atmospheric containment) requires supplemental oxygen at a concentration above the NIOSH-approved level of 23.5%, the requested exemptions are necessary to support the above authorization request.

References

1. Memorandum Of Understanding Between The U.S. NRC and The OSHA, 10/21/88
2. NUREG/CR-0041, Revision 1, Manual of Respiratory Protection Against Airborne Radioactive Material, January 2001
3. VEPCO letter Serial No. 97-092 dated 03/27/97, 10CFR20.1703(a)(2) Equipment Authorization
4. ANSI Z88.2-1992, American National Standard for Respiratory Protection, approved 08/06/92
5. Regulatory Guide 8.15, Acceptable Programs for Respiratory Protection, Revision 1, dated October 1999

6. USNRC NUREG/CR-0041, Rev. 1, January 2001, Manual of Respiratory Protection Against Airborne Radioactive Material
7. National Fire Protection Association (NFPA) 1981, Standard on Open Circuit SCBA for Emergency Services, 2007 Edition
8. NRC Letter Serial No. 98-473 dated July 31, 1998, NAPS Exemption and Authorization approval (TAC NOS. M98384 and M98385)
9. NRC Letter Serial No. 98-565 dated September 3, 1998, SPS Exemption and Authorization approval (TAC NOS. M98382 and M98383)