

**INTERIM FINDING REPORT for**

**REASONABLE ASSURANCE**

**On the Adequacy of the Offsite  
Radiological Emergency Response Planning  
for the  
Proposed North Anna Power Station Unit 3  
Mineral, Virginia**

**December 1, 2009**

Prepared by the  
U. S. Department of Homeland Security  
Federal Emergency Management Agency  
Technological Hazards Branch

Region III

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## Executive Summary

On November 27, 2007, Dominion Virginia Power (Dominion) submitted a Combined License (COL) Application to the U.S. Nuclear Regulatory Commission to construct and operate Unit 3 of the North Anna Power Station (NAPS) facility located in Mineral, Louisa County, Virginia, approximately 40 miles northwest of Richmond. Part 5 of the COL Application contained the proposed North Anna Power Station Unit 3 Combined License Application Emergency Plan. The review of the materials provided with the COL Application resulted in findings for all the sixteen planning standards, all of which were found to be Adequate.

The following materials provided with the COL Application were the basis for the review:

- The *Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP)*, Volume III, *The Commonwealth of Virginia Emergency Operations Plan Peacetime Disasters*, May 2007.
- The Emergency Response Plan (ERP), and a separate NUREG-0654 Cross Reference, for the Virginia Department of Health/Division of Radiological Health (VDH/DRH), along with the Standing Operating Procedures (Appendix 17) of the plan.
- The *Louisa County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Caroline County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Hanover County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Orange County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Spotsylvania County Radiological Emergency Response Plan (RERP)*, October 2006.
- Evacuation Time Estimate (ETE) report prepared by KLD Associates, Inc., October 2007.
- The State of Maryland (RERP) Annex Q (50-mile Ingestion Planning Zone).

NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," amended March 2002, its Supplements, the Interim REP Program Manual (August 2002), and current FEMA guidance documents were considered in making the determination as to the plans' adequacy.

The review of the offsite emergency plans resulted in evaluation findings for all of the planning standards and associated criteria contained in NUREG-0654/FEMA-REP-1, Rev. 1, as amended, that are ORO responsibilities. Each planning standard and criterion was rated as:

- Adequate: Plans are adequate and there is reasonable assurance that they can be implemented with only limited or no corrections needed
- Adequate – corrections must be made: Plans are adequate but before a determination can be made as to whether they can be implemented, corrections must be made to the plans or supporting measures must be demonstrated (e.g. adequacy and maintenance of procedure, training, resource, staffing levels and qualifications, and equipment).
- Inadequate: Plans are inadequate and cannot be implemented until they are revised to correct deficiencies noted in the Federal review.
- N/A: The planning standard is not applicable to offsite response organizations.

The review resulted in the following interim evaluation findings (ratings for each individual criterion are summarized in Section IV, Criterion Rating Summary):

Planning Standard A	Adequate
Planning Standard B	N/A
Planning Standard C	Adequate
Planning Standard D	Adequate
Planning Standard E	Adequate
Planning Standard F	Adequate
Planning Standard G	Adequate
Planning Standard H	Adequate
Planning Standard I	Adequate
Planning Standard J	Adequate
Planning Standard K	Adequate
Planning Standard L	Adequate
Planning Standard M	Adequate
Planning Standard N	Adequate
Planning Standard O	Adequate
Planning Standard P	Adequate

Adequacy of the NAPS Unit 3 COL Application Emergency Plan review for OROs is also dependent on:

- Satisfactory demonstration of plan implementation during a joint exercise with the licensee and state and local governments and utilizing NAPS Unit 3 facilities.

## **I. Introduction**

### **A. General Characteristics of the North Anna Power Station**

The North Anna Power Station (NAPS) site, consisting of approximately 1,856 acres, is located in Louisa County on the Southern shore of Lake Anna in central Virginia, 40 miles northwest of Richmond, 38 miles east of Charlottesville, and 24 miles southwest of Fredericksburg.

The 10-mile plume Emergency Planning Zone (EPZ) includes Louisa, Caroline, Hanover, Orange and Spotsylvania Counties. The 50-mile Ingestion Pathway Zone (IPZ) includes all or parts of Louisa, Caroline, Hanover, Orange, Spotsylvania, Albemarle, Amelia, Buckingham, Chesterfield, Culpeper, Cumberland, Essex, Fauquier, Fluvanna, Goochland, Greene, Henrico, King George, King and Queen, King William, Madison, New Kent, Page, Powhatan, Prince William, Rappahannock, Richmond, Stafford and Westmoreland Counties in the Commonwealth of Virginia and Charles County in the State of Maryland. NAPS is owned and operated by Dominion Generation.

## **B. Emergency Response Organization**

In the Commonwealth of Virginia, the implementation of protective actions beyond the site boundary but within the 10-mile plume exposure EPZ and within the 50-mile IPZ is the primary responsibility of the elected officials of the local governments. As time may be a critical factor in providing protection against plume exposure, initial response is based on the implementation of preplanned actions. Follow-up action will be taken on the advice of the Virginia Emergency Operations Center (EOC) personnel, based on the results of evaluation and assessment of the accident. Local directors of emergency services may reach independent and preemptive decisions to implement protective actions within their jurisdictions. Jurisdictions implementing preemptive local protective actions will ensure that the Virginia EOC and surrounding jurisdictions are fully informed.

The Virginia Department of Emergency Management (VDEM) will coordinate implementation of the State plan, to include assistance to local governments and integrates emergency response actions of Federal and State agencies.

The Virginia Department of Health (VDH) will implement procedures to determine the projected off-site radiation dose. Based on this assessment, VDH will recommend protective actions. VDH will evaluate and monitor the radiological situation on a continuing basis from the time of initial notification until the radiological emergency is over. It will provide technical guidance and assistance relative to actions required, as indicated by the situation.

Radiation assessment and coordination of protective actions within the IPZ will be the primary responsibility of the VDEM and VDH in cooperation with the Virginia Department of Agriculture and Consumer Services and the Virginia Department of Environmental Quality, Water Division.

In the State of Maryland, the implementation of protective actions within the 50-mile IPZ is the primary responsibility of the Department of the Environment, with assistance provided by other state agencies and the local governments.

### **C. Plans**

The Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) is Volume III of the *Commonwealth of Virginia Emergency Operations Plan Peacetime Disasters*. Volume III includes the basic plan, as well as the organization concepts and policies, and establishes the assignment of responsibilities for radiological emergencies. The Appendices and Annexes in Volume III also include operational concepts and procedures for specific state departments' emergency responsibilities.

Louisa, Caroline, Hanover, Orange, and Spotsylvania Counties maintain separate Radiological Emergency Response Plans (RERPs). The individual plans contain the county's concept of operations and policies. Appendices assign specific emergency responsibilities to local government agencies.

The following plans were reviewed:

- The *Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP)*, Volume III, *The Commonwealth of Virginia Emergency Operations Plan Peacetime Disasters*, May 2007.
- The Emergency Response Plan (ERP), and a separate NUREG-0654 Cross Reference, for the Virginia Department of Health/Division of Radiological Health (VDH/DRH) was provided, along with the Standing Operating Procedures (Appendix 17) of the plan.
- The *Louisa County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Caroline County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Hanover County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Orange County Radiological Emergency Response Plan (RERP)*, October 2006.
- The *Spotsylvania County Radiological Emergency Response Plan (RERP)*, October 2006.
- Evacuation Time Estimate (ETE) report prepared by KLD Associates, Inc., dated October 2007.
- The State of Maryland (RERP) (Annex Q) which extends to the 50-mile Ingestion Planning Zone.

### **D. Basis for Findings**

The status of emergency preparedness for offsite response to possible incidents resulting from an accident at NAPS Unit 3 has been determined based on review of the plans cited above.

Adequacy of the reviewed plans is dependent upon:

- 44CFR part 353

- Guidance Memoranda
- NUREG-0654/FEMA-REP-1, Rev. 1

## **E. Evaluation Format**

In accordance with the FEMA/NRC Memorandum of Understanding (44 CFR 353, Appendix A) dated June 17, 1993, FEMA has agreed to furnish assessments, findings, and determinations as to whether State and local emergency plans and preparedness are adequate and continue to be capable of implementation (e.g., adequacy and maintenance of procedures, training, and resources, staffing levels and qualification and equipment adequacy). These findings and determinations are used by the NRC under its own rules in connection with its licensing and regulatory requirements and FEMA supports its findings in the NRC licensing process and related court proceedings – 44 CFR 350.3(f).

NUREG 0654/FEMA-REP-1, Rev. 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” November 1980 is the guidance used to review and develop this Interim Finding Report. Each planning standard will have an overall rating.

## **II. Review and Evaluation of Emergency Preparedness Plans for the North Anna Power Station against the Planning Standards of NUREG 0654/FEMA-REP-1, REV. 1**

The following table and discussion present the results of the review and evaluation for each criterion. A total of 109 criteria were evaluated. All were found to be Adequate.

- A. Assignment of Responsibility (Organization Control) Planning Standard:**  
*Primary responsibilities for emergency response by the nuclear facility licensee, and by State and local organizations within the Emergency Planning Zone have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.*

### **A. Evaluation: Adequate.**

The plans provided for review meet all of the nine criteria under Planning Standard A in NUREG-0654/FEMA-REP-1, Rev. 1.

Each plan identifies the organizations that are intended to be part of the overall response [A.1.a]; specifies the concept of operations of those organizations and their relationship to the total effort [A.1.b]; illustrates these interrelationships in a block diagram [A.1.c]; identifies the specific individual (by title) who is in charge of the emergency response [A.1.d]; and provides for 24-hour per day emergency response including the manning of communications links [A.1.e]. The individual responsible for assuring continuity of resources is specified, by title, in each plan

[A.4]. In addition, each plan specifies the functions and responsibilities for major elements and key individuals and summarizes this information in a table showing primary and support responsibilities for each agency [A.2.a]. Each plan contains the legal basis for the authorities detailed in the plan [A.2.b].

Criterion A.3 requires that written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations having an emergency response role within the Emergency Planning Zones be provided in an appendix to the plans. Alternatively, the plans may contain descriptions of the emergency measures to be provided, the criteria for the implementation of the written agreements, and the arrangements for exchange of information. Written agreements are described in the Commonwealth of Virginia Basic Plan, Attachment 1B dated June 2009, and in the Caroline, Hanover, Louisa, Orange, and Spotsylvania Counties Basic Plan dated October 2009.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- B. Onsite Emergency Organization Planning Standard:** *On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available, and the interfaces among various onsite response activities and offsite support and response activities are specified.*

**B. Evaluation:** N/A; there are no assigned offsite responsibilities for this planning standard.

- C. Emergency Response Support and Resources Planning Standard:** *Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the Licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.*

**C. Evaluation:** Adequate.

The plans provided for review meet all of the six evaluation criteria under Planning Standard C in NUREG-0654/FEMA-REP-1, Rev. 1.

The specific person authorized to request Federal assistance is detailed in the COVRERP [C.1.a]. The Federal resources expected are detailed in the COVRERP and the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP) [C.1.b]. The State and local resources available to support the Federal response are specified in the COVRERP and the risk counties' RERPs [C.1.c]. Virginia Department of



Emergency Management (VDEM) and VDH/DRH send representatives to the NAPS Emergency Operations Facility [C.2.a].

Evaluation criteria C.3, each organization shall identify radiological laboratories and their general capabilities, and C.4, each organization shall identify nuclear and other facilities, organizations or individuals which can be relied upon in an emergency to provide assistance, were addressed in the Commonwealth of Virginia Radiological Emergency Response Plan, Appendices 1 and 5 of the Basic Plan, and in the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania plan updates submitted in October 2009.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- D. Emergency Classification System Planning Standard:** *A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by the facility licensees for determinations of minimum initial offsite response measures.*

**D. Evaluation: Adequate.**

The plans provided for review meet both of the evaluation criteria under Planning Standard D in NUREG-0654/FEMA-REP-1, Rev. 1.

All plans establish an emergency classification level scheme that is consistent with that established by NAPS. [D.3] Protective actions consistent with the licensee recommendations, based on the emergency classification level, are detailed in the plans and include evacuation and sheltering-in-place. [D.4]

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- E. Notification Methods and Procedures Planning Standard:** *Procedures have been established for notification, by the licensee of State and local response organizations and for notification of emergency personnel by all response organizations; the content of initial and follow-up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.*

**E. Evaluation: Adequate.**

The plans provided for review meet all of the five evaluation criteria under Planning Standard E in NUREG-0654/FEMA-REP-1, Rev. 1.

Procedures are established in the COVRERP and the risk counties' RERPs which describe the notification by Dominion Power of the offsite response organizations consistent with the emergency classification [E.1].

Information pertaining to evaluation criteria E.2, each organization shall establish procedures which describe mutually agreeable bases for notification of response organizations, E.5, state and local government organizations shall establish a system for disseminating to the public appropriate information, E.6, each organization shall establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public, and E.7 each organization shall provide written messages intended for the public, are addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) and the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP) in the June 2009 plans update, and the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania plan updates submitted in October 2009.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

**F. Emergency Communications Planning Standard: *Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.***

**F. Evaluation: Adequate.**

The plans provided for review meet all of the seven evaluation criteria under Planning Standard F in NUREG-0654/FEMA-REP-1, Rev. 1.

The communications plans for emergencies are addressed in the COVRERP and risk counties' RERPs. There is a provision for 24-hour per day notification [F.1.a]; a provision for communications with contiguous State/local governments within the Emergency Planning Zones [F.1.b]; a provision for communications with Federal emergency response organizations [F.1.c]; and a provision for communications between NAPS and the State and local Emergency Operations Centers and radiological monitoring teams [F.1.d]. Each plan also addresses periodic testing of the entire emergency communications system [F.3]. Information pertaining to evaluation criterion F.1.e (provision for alerting or activating emergency personnel in each response organization) and F.2 (a coordinated communication link for fixed and mobile medical support facilities) is addressed in the Commonwealth of Virginia Radiological Emergency Response Plan COVRERP Appendix 4 and 10 of the Basic Plan, and in Attachment 14 of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- G. Public Education and Information Planning Standard:** *Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.*

**G. Evaluation: Adequate.**

The plans provided for review meet all of the seven evaluation criteria under Planning Standard G in NUREG-0654/FEMA-REP-1, Rev. 1.

Each plan designates a point of contact and the Joint Information Center (JIC) for use by the news media during an emergency [G.3.a]. A designated spokesperson, which has access to all necessary information, is referenced in all of the plans [G.4.a]. Arrangements are included in the plans for the timely exchange of information among those designated spokespersons [G.4.b]. Public Inquiry (Rumor Control) functions are described in all of the plans [G.4.c].

Information pertaining to evaluation criterion G.1, each organization shall provide a coordinated periodic (at least annually) dissemination of information to the public, G.2, the public information program shall provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually, and G.5, each organization shall conduct coordinated programs at least annually to acquaint news media with the emergency plans, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendix 9 of the Basic Plan, and Sections IX.C, IX.C.1, and IX.C.2 Appendix 2 of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- H. Emergency Facilities and Equipment Planning Standard:** *Adequate emergency facilities and equipment to support the emergency response are provided and maintained.*

**H. Evaluation: Adequate.**

The plans provided for review meet all of the six evaluation criteria under Planning Standard H in NUREG-0654/FEMA-REP-1, Rev. 1.

Each plan gives the location and staffing requirements for an Emergency Operations Center (EOC) [H.3]. All plans detail the radiological monitoring equipment that is provided by VDH/DRH to the risk counties [H.7]. As stated in the plans, the central point for the receipt and analysis of all field monitoring data and coordination of sample media is the VDH/DRH representative at the EOF [H.12].

Information pertaining to evaluation criterion H.4, each organization shall provide for timely activation and staffing of the facilities, H.10, each organization shall make provisions to inspect, inventory and operationally check emergency equipment/instruments at least once each calendar quarter and after use, and H.11, each plan shall, in an appendix, include identification of emergency kits by general category, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendix 7 of the Basic Plan, and Sections VIII.C, IX.A, VII.A.1 and Appendices 6, 7, and 8 of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

**I. Accident Assessment Planning Standard: *Adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.***

**I. Evaluation: Adequate.**

The plans provided for review meet all of the five evaluation criteria under Planning Standard I in NUREG-0654/FEMA-REP-1, Rev. 1.

The plans describe the capability and resources for field monitoring activities within the plume exposure EPZ. VDH/DRH has the responsibility for beta/gamma measurements, air sampling, surface water sampling, and crop sampling. The risk counties are responsible for beta/gamma measurements [I.7]. VDH/DRH, Dominion Power, and Federal personnel, if necessary and available, will locate and track the airborne radioactive plume [I.11].

Information pertaining to evaluation criterion I.8, each organization, where appropriate, shall provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards, I.9, each organization shall have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ, and I.10, each organization shall establish means for relating the various measured parameters (e.g., contamination levels, water and air activity levels), have been addressed in

the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendices 5 and 6, of the Basic Plan, Appendices 1 & 5 of the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP) and Appendix 7 of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- J. Protective Response Planning Standard:** *A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate (66 FR 5427). Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.*

**J. Evaluation: Adequate.**

The plans provided for review meet all of the seventeen evaluation criteria under Planning Standard I in NUREG-0654/FEMA-REP-1, Rev. 1.

Information pertaining to evaluation criterion J.2, each licensee shall make provisions for evacuation routes and transportation, J.9, each state and local organization shall establish a capability for implementing protective measures based upon protective guides, J.10.a-J.10.m, maps showing evacuation routes, population, means of notifying transients and resident population, protecting those persons whose mobility may be impaired, provisions for the use of radioprotective drugs, plans including the method by which decisions by the State Health Department for administering radioprotective drugs, means of relocation, relocation centers in host areas, projected traffic capabilities of evacuation routes, control of access to evacuated areas, identification of and means for dealing with potential impediments, time estimate for evacuation, and bases for the choice of recommend protective actions from the plume exposure pathway during emergency conditions, J.11, each state shall specify the protective measures to be used for the ingestion pathway, and J.12, each organization shall describe the means for registering and monitoring of evacuees at relocation centers, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendices 5 through 12 of the Basic Plan, Appendix 1 through 11 of the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP) and throughout various sections and appendices of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- K. Radiological Exposure Control Planning Standard: Means for controlling radiological exposures, in an emergency, is established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.**

**K. Evaluation: Adequate.**

The plans provided for review meet all of the five evaluation criteria under Planning Standard K in NUREG-0654/FEMA-REP-1, Rev. 1.

All of the plans instruct emergency workers to read their dosimeters at 30 minute intervals and record these readings on a standardized form. Instructions are provided on maintaining these records. [K.3.b]

Information pertaining to evaluation criterion K.3.a, each organization shall make provision for 24-hour per day capability to determine the doses received by emergency personnel involved in any nuclear accident, K.4, each state and local organization shall establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides, K.5.a, each organization as appropriate, shall specify action levels for determining the need for decontamination, and K.5.b, each organization as appropriate, shall specify the means for determining the need for decontamination, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendices 7 & 11 of the Basic Plan, Appendices 6 & 10 of the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP), and Section VIII.F, Appendix 6 & 8 of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

- L. Medical and Public Health Support Planning Standard: Arrangements are made for medical services for contaminated injured individuals.<sup>1</sup>**

**L. Evaluation: Adequate.**

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<sup>1</sup> The availability of an integrated emergency medical services system and a public health emergency plan serving the area in which the facility is located and, as a minimum, equivalent to the Public Health Service Guide for Developing Health Disaster Plans, 1974, and to the requirements of an emergency medical services system as outlined in the Emergency Medical Services System Act of 1973 (PL 93-154 and amendments in the 1979 PL 96-142), should be a part of and consistent with overall State or local disaster control plans and should be compatible with the specific overall emergency response for the facility.

The plans provided for review meet all three evaluation criteria under Planning Standard L in NUREG-0654/FEMA-REP-1, Rev. 1.

Information pertaining to evaluation criterion L.1, each organization shall arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake, L.3, each state shall develop lists indicating the location of public, private, and military hospitals and other emergency medical services facilities, and L.4, each organization shall arrange for transporting victims of radiological accidents to medical support facilities, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendix 5, of the Basic Plan, Appendix 1 of the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP), and Appendix 8 of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

**M. Recovery and Reentry Planning and Post-accident Operations Planning**  
**Standard: *General plans for recovery and reentry are developed.***

**M. Evaluation: Adequate.**

The plans provided for review meet all of the three evaluation criteria under Planning Standard M in NUREG-0654/FEMA-REP-1, Rev. 1.

Information pertaining to evaluation criterion M.1, each organization, as appropriate shall develop general plans and procedures for reentry and recovery, M.3, each state plan shall specify means for informing members of the response organizations that a recovery operation is to be initiated, and M.4, each plan shall establish a method for periodically estimating total population exposure, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendix 5 and 11 of the Basic Plan, Appendices 1, 4, and 11 of the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP), and Appendices 1 & 6 of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.  
*Specific criterion elements are cross referenced in each of the basic Radiological Emergency Response Plans.*

**N. Exercises and Drills Planning Standard: *Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.***  
**N. Evaluation: Adequate.**

The plans provided for review meet all fourteen evaluation criteria under Planning Standard N in NUREG-0654/FEMA-REP-1, Rev. 1.

The plans provide for biennial exercises at NAPS conducted as set forth in NRC and FEMA rules and guidelines [N.1.a]. These exercises will include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario; observation and critique by qualified personnel from Federal, State, or local governments; varied scenarios such that all major elements of the plans and preparedness organizations are tested within a six year period; provisions to start an exercise between 6:00 p.m. and 6:00 a.m. or on the weekend once every six years; varied weather conditions; and some exercises will be unannounced [N.1.b].

The plans describe how exercises and drills are to be carried out and the requirements for those exercises and drills in accordance with evaluation criteria N.3.a, b, c, d, e, and f. They also state that qualified observers from Federal, State, or local governments will observe and critique exercises or drills [N.4].

Evaluation criteria N.2 address periodic drills. Two of the drills are adequately detailed in the plans: radiological monitoring drills [N.2.d] and health physics drills [N.2.e].

Information pertaining to evaluation criterion N.2.a, communications with state and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly, N.2.c, a medical emergency drill involving a simulated contaminated individual which contains provisions for participation by local support services agencies, and N.5, each organization shall establish means for evaluating observer and participant comments on areas needing improvement, including emergency plan procedural changes, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVERRP) Appendix 13 of the Basic Plan, and Section XII of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are cross referenced in each of the basic Radiological Emergency Response Plans.*

**O. Radiological Emergency Response Training Planning Standard: *Radiological emergency response training is provided to those who may be called on to assist in an emergency.***

**O. Evaluation: Adequate.**

The plans provided for review meet all of the eleven evaluation criteria under Planning Standard O in NUREG-0654/FEMA-REP-1, Rev. 1.



Information pertaining to evaluation criterion O.1, each organization shall assure the training of appropriate individuals, O.1.b, each offsite response organization shall participate in and receive training, O.4 a.–d., f.–h. and j., each organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans, and O.5 each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendix 13 of the Basic Plan, Appendices 1 and 12 of the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP), and Section XII of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

**P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans Planning Standard: *Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.***

**P. Evaluation: Adequate.**

The plans provided for review meet all of the nine evaluation criteria under Planning Standard P in NUREG-0654/FEMA-REP-1, Rev. 1.

Information pertaining to evaluation criterion P.1, each organization shall provide for the training of individuals responsible for the planning effort, P. 2, each organization shall identify by title the individual with the overall authority and responsibility for radiological emergency planning, P.3., each organization shall designate an emergency planning coordinator with responsibility for the development, update and coordination of plans, P.4, each organization shall update its plan and agreements as needed, P.5, the emergency response plans and approved changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans, P.6, each plan shall contain a detailed listing of supporting plans and their source, P.7, each plan shall contain as an appendix listing, by title, procedures required to implement the plan, P.8, each plan shall contain a specific table of contents, and P.10, each organization shall provide for updating telephone numbers in emergency procedures at least quarterly, have been addressed in the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) Appendices 2 and 13 and the Table of Contents of the Basic Plan, Appendices 12 and 17 of the Virginia Department of Health/Division of Radiological Health (VDH/DRH) Emergency Response Plan (ERP), and Sections VII, XI, XII, and XIV of the Risk Counties of Caroline, Hanover, Louisa, Orange, and Spotsylvania Basic Plans.

*Specific criterion elements are referenced in a NUREG 0654 crosswalk for each of the basic Radiological Emergency Response Plans.*

### III. POST COL Reasonable Assurance Tracking

All planning criteria have been rated as Adequate. Since NAPS Unit 3 would utilize the same offsite emergency plans currently in place for the two operating units, there are no issues that need to be incorporated into a Post COL Tracking Form.

### IV. Criteria Rating Summary

Criterion	Rating State	Counties	Criterion	Rating State	Counties	Criterion	Rating State	Counties
A.1.a	Adequate	Adequate	H.3	Adequate	Adequate	M.1	Adequate	Adequate
A.1.b	Adequate	Adequate	H.4	Adequate	Adequate	M.3	Adequate	Adequate
A.1.c	Adequate	Adequate	H.7	Adequate	Adequate	M.4	Adequate	Adequate
A.1.d	Adequate	Adequate	H.10	Adequate	Adequate	N.1.a	Adequate	Adequate
A.1.e	Adequate	Adequate	H.11	Adequate	Adequate	N.1.b	Adequate	Adequate
A.2.a	Adequate	Adequate	H.12	Adequate	Adequate	N.2.a	Adequate	Adequate
A.2.b	Adequate	Adequate	I.7	Adequate	Adequate	N.2.c	Adequate	Adequate
A.3	Adequate	Adequate	I.8	Adequate	Adequate	N.2.d	Adequate	Adequate
A.4	Adequate	Adequate	I.9	Adequate	Adequate	N.2.e	Adequate	Adequate
C.1.a	Adequate	Adequate	I.10	Adequate	Adequate	N.3.a	Adequate	Adequate
C.1.b	Adequate	Adequate	I.11	Adequate	Adequate	N.3.b	Adequate	Adequate
C.1.c	Adequate	Adequate	J.2	Adequate	Adequate	N.3.c	Adequate	Adequate
C.2.a	Adequate	Adequate	J.9	Adequate	Adequate	N.3.d	Adequate	Adequate
C.3	Adequate	Adequate	J.10.a	Adequate	Adequate	N.3.e	Adequate	Adequate
C.4	Adequate	Adequate	J.10.b	Adequate	Adequate	N.3.f	Adequate	Adequate
D.3	Adequate	Adequate	J.10.c	Adequate	Adequate	N.4	Adequate	Adequate
D.4	Adequate	Adequate	J.10.d	Adequate	Adequate	N.5	Adequate	Adequate
E.1	Adequate	Adequate	J.10.e	Adequate	Adequate	O.1	Adequate	Adequate
E.2	Adequate	Adequate	J.10.f	Adequate	Adequate	O.1.b	Adequate	Adequate
E.5	Adequate	Adequate	J.10.g	Adequate	Adequate	O.4.a	Adequate	Adequate
E.6	Adequate	Adequate	J.10.h	Adequate	Adequate	O.4.b	Adequate	Adequate
E.7	Adequate	Adequate	J.10.i	Adequate	Adequate	O.4.c	Adequate	Adequate
F.1.a	Adequate	Adequate	J.10.j	Adequate	Adequate	O.4.d	Adequate	Adequate
F.1.b	Adequate	Adequate	J.10.k	Adequate	Adequate	O.4.f	Adequate	Adequate
F.1.c	Adequate	Adequate	J.10.l	Adequate	Adequate	O.4.g	Adequate	Adequate
F.1.d	Adequate	Adequate	J.10.m	Adequate	Adequate	O.4.h	Adequate	Adequate
F.1.e	Adequate	Adequate	J.11	Adequate	Adequate	O.4.j	Adequate	Adequate
F.2	Adequate	Adequate	J.12	Adequate	Adequate	O.5	Adequate	Adequate
F.3	Adequate	Adequate	K.3.a	Adequate	Adequate	P.1	Adequate	Adequate
G.1	Adequate	Adequate	K.3.b	Adequate	Adequate	P.2	Adequate	Adequate
G.2	Adequate	Adequate	K.4	Adequate	Adequate	P.3	Adequate	Adequate
G.3.a	Adequate	Adequate	K.5.a	Adequate	Adequate	P.4	Adequate	Adequate
G.4.a	Adequate	Adequate	K.5.b	Adequate	Adequate	P.5	Adequate	Adequate

Criterion	Rating State	Counties	Criterion	Rating State	Counties	Criterion	Rating State	Counties
G.4.b	Adequate	Adequate	L.1	Adequate	Adequate	P.6	Adequate	Adequate
G.4.c	Adequate	Adequate	L.3	Adequate	Adequate	P.7	Adequate	Adequate
G.5	Adequate	Adequate	L.4	Adequate	Adequate	P.8	Adequate	Adequate
						P.10	Adequate	Adequate

## V. Reasonable Assurance

After a thorough review of currently available Offsite Plans and Procedures, based upon the standards and criteria of NUREG 0654/FEMA-REP-1, Rev. 1, a determination has been made that the plans are adequate and there is Reasonable Assurance that the plans can be implemented with no corrections needed. A qualifying REPEX will be demonstrated by the NAPS Unit 3 in conjunction with Offsite State and Counties' participation.

## VI. Acronym Key

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COL	Combined License
EAC	Evacuation Assembly Center
EAS	Emergency Alert System
EOC	Emergency Operations Center
EPA	(U.S.) Environmental Protection Agency
EPZ	Emergency Planning Zone
ERP	Emergency Response Plan
IPZ	Ingestion Pathway Zone
JIC	Joint Information Center
KI	Potassium Iodide
NAPS	North Anna Power Station
N/A	Not Applicable
NUREG	Nuclear Regulatory Commission Publication
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PAZs	Protective Action Zones
RAI	Request for Additional Information
Rem	Roentgen Equivalent Man
RERP	Radiological Emergency Response Plan
VDEM	Virginia Department of Emergency Management
VDH	Virginia Department of Health
VDH/RHP	Virginia Department of Health-Radiological Health Program
VRERP	Virginia Radiological Emergency Response Plan