

February 22, 2000

MEMORANDUM TO: Arthur T. Howell III, Director
Division of Reactor Safety, Region IV

FROM: Suzanne C. Black, Deputy Director */RA/*
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT NOS. 1 AND 2 - TASK INTERFACE
AGREEMENT (TIA) NO. 99-018 RE: EVALUATION OF THE CONDUCT
OF PERSONNEL ASSEMBLY AND SITE EVACUATION UNDER
EMERGENCY CONDITIONS (TAC NOS. MA6004 AND MA6005)

In a memorandum dated June 21, 1999, Region IV requested a technical review of the Arkansas Nuclear One Station Emergency Plan (ANOSEP), Revision 24, Sections J.1.3 and J.1.6.2, and Station Emergency Plan Implementing Procedure 1903.030, Revision 22, "Evacuations." The scope of this review was to clarify the planning requirements for implementing a site assembly for the purposes of determining personnel accountability and how these requirements relate to the decision to conduct a site evacuation during an emergency condition. Entergy Operations Inc. (the licensee) has linked the site accountability function to the performance of a site evacuation. This precludes the licensee from performing a timely site accountability for events below the Site Area Emergency classification or during a Site Area Emergency or General Emergency when a site evacuation is delayed for cogent safety reasons.

The Emergency Preparedness and Health Physics Section, Operator Licensing, Human Performance & Plant Support Branch, Division of Inspection Program Management, Office of Nuclear Reactor Regulation (NRR) has completed its review of the ANOSEP, Revision 24, and associated implementing procedures. Based on this review, NRR has concluded that it is apparent that the licensee can only perform a site accountability when a site evacuation has been ordered. This is inconsistent with the guidance criteria of NUREG-0654/FEMA-REP-1, Revision 1, and is not considered to be a prudent emergency planning practice for the protection of emergency workers. It is the NRR staff's position that licensees should have the capability to perform a site accountability during any emergency condition, without requiring a site evacuation. In addition, licensees should have the capability to complete a site accountability for all individuals within the protected area within 30 minutes of the decision to conduct a site accountability.

The NRR staff recommends that Region IV request that the licensee provide information to justify that their approach to site accountability at Arkansas Nuclear One is an acceptable

Mr. A. T. Howell III

- 2 -

February 22, 2000

method for meeting emergency planning standard 10 CFR 50.47(b)(10) in view of the positions expressed in the attached Safety Evaluation. This completes our effort under TAC Nos. MA6004 and MA6005.

Docket Nos. 50-313 and 368

Attachment: As stated

cc w/encl: W. Lanning, DRS, RI
C. Casto, DRS, RII
J. Grobe, DRS, RIII

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

EMERGENCY PLAN, SITE ACCOUNTABILITY AND SITE EVACUATION

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNITS 1 AND 2

DOCKET NOS. 50-313 and 50-368

1.0 INTRODUCTION

This safety evaluation reviews the Arkansas Nuclear One Station Emergency Plan (ANOSEP) and supporting implementing procedures regarding site accountability and site evacuation as requested by Region IV in a letter dated June 21, 1999, TIA 99-018 (previously 99TIA002).

2.0 APPLICABLE REGULATIONS AND GUIDANCE

In part, 10 CFR 50.47(b)(10) states: "A range of protective actions have been developed for... emergency workers...."

Section IV.B of 10 CFR Part 50, Appendix E, states, in part, "...the emergency action levels that are to be used for determining when and what type of protective measures should be considered within...the site boundary to protect health and safety...."

Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," states, in part:

"The criteria and recommendations contained in Revision 1 of NUREG-0654/FEMA-REP-1 are considered by the NRC [Nuclear Regulatory Commission] staff to be acceptable methods for complying with the standards in 10 CFR 50.47 that must be met in on-site and off-site emergency response plans."

Section II.J, 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," contains the following criteria for protective response:

Evaluation Criteria

4. Each licensee shall provide for the evacuation of onsite non-essential personnel in the event of a Site or General Emergency...
5. Each licensee shall provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within

30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.

Regulatory guides are issued to describe methods acceptable to the NRC staff for implementing specific parts of the Commission's regulations. Regulatory guides are not substitutes for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a license by the Commission.

3.0 BACKGROUND

By letter dated June 21, 1999, Region IV requested the Office of Nuclear Reactor Regulation to review the Arkansas Nuclear One Station Emergency Plan (ANOSEP), Revision 24, Sections J.1.3 and J.1.6.2 and ANOSEP Implementing Procedure 1903.030, "Evacuations," Revision 22. Region IV requested a technical review to clarify the planning requirements for implementing a site assembly (to determine accountability) and how these relate to the decision to conduct a site evacuation during an emergency. The Region expressed a concern about the licensee linking site accountability to site evacuation which could preclude the licensee from performing a timely site accountability for emergency events below the Site Area Emergency classification. Specifically, the Region indicated that:

- The licensee may have difficulty performing a site assembly in a timely manner following a site area or general emergency declaration, according to station procedures, in cases when site evacuation is delayed or may be inadvisable for safety reasons.
- The licensee may have difficulty, according to station procedures, performing a site assembly for reasons other than the declaration of a site area or general emergency when it may be desirable for the safety of station personnel. That is, there are no processes in place to conduct a site assembly (to determine accountability) should decision makers deem it necessary.
- The definition of "at the time of the emergency" found in NUREG-0654/FEMA-REP-1, Revision 1, Planning Standard J.5 is vague. Specifically, [the Region questioned] does "emergency" refer to an emergency classification or to an initial set of events that results in an emergency classification? If it does refer to emergency classification [the Region questioned], then which one is meant? Past regional practice has been to consider the emergency to start with the declaration of an alert.

4.0 EVALUATION

Section J.1.3 of the ANOSEP, Revision 24, indicates a plant evacuation is considered for non-essential personnel when the Shift Superintendent or Technical Support Center Director determines that: (1) general area radiation levels outside of a Radiologically Controlled Area exceed 2.5 mrem/hr or unevaluated airborne radioactivity exceeds $9 \times 10^{-10} \mu\text{Ci/cc}$, which is attributed to a loss of control or radioactive material and the threat cannot be confined to a well-defined area; (2) uncontrolled toxic gas leak where the hazard is not confined to a local

area; or (3) a Site Area Emergency (SAE) or General Emergency (GE) has been declared. Certain extenuating conditions may preclude or delay plant evacuation. The decision is based upon the action which presents the least risk to non-essential personnel.

Section J.1.6.2 of the ANOSEP, Revision 24, states, in part, that "...It is ANO's [Arkansas Nuclear One] goal to achieve initial accountability within 30 minutes of the declaration of a plant evacuation...."

Both Sections J.1.3 and J.1.6.2 of the ANOSEP, Revision 24, and Sections 4.11, 5.3, 6.1.2, and 6.3.1 of ANOSEP Implementing Procedure No. 1903.030, "Evacuations," Revision 22, link the conduct of a site accountability to the order to conduct a site evacuation. Both the plan and procedure indicate a site evacuation must be considered - not mandatory - at SAE or GE classifications and can be delayed for cogent safety reasons. Although delaying the site evacuation for cogent safety reasons is acceptable, the apparent inability to perform a site accountability without requiring a site evacuation is a cause for concern. Both the procedure and the plan preclude the licensee from having the capability to account for all individuals onsite at the time of an emergency and to ascertain the names of missing individuals within 30 minutes of the start of an emergency unless a site evacuation is ordered. In addition, information provided by the Region from previous inspection reports indicates that Entergy Operations, Inc. (the licensee) has had difficulties in conducting a site accountability within the 30 minute timeframe.

Based upon a review of the above sections of the ANOSEP, Revision 24, and the supporting procedure, it appears that the licensee will conduct a site accountability only if a site evacuation is ordered. This is inconsistent with NUREG-0654/FEMA-REP-1, Revision 1, which indicates licensees will have the capability to account for all personnel onsite at the "time of the emergency" and ascertain the names of those missing within 30 minutes of the "start of an emergency," and not upon the decision to conduct a site evacuation.

At the SAE or the GE classifications, licensees are to provide for the evacuation of non-essential personnel from the site. The word "provide" implies an evacuation may not be warranted or prudent for all events under these two classifications, as discussed in Section J.1.3 of the ANOSEP, Revision 24. In addition, there may be situations where it is desirable to conduct a site accountability at lower classification levels as well as for a SAE or GE where immediate evacuation of non-essential personnel is not advisable for safety reasons. If a licensee has the capability to conduct a site accountability at the time of an emergency without requiring a site evacuation, the licensee then has the flexibility to react to any emergency situation requiring the accountability of site personnel. This capability has proven to be essential in actual events such as the Three Mile Island Nuclear Station security intrusion event and a recent Unusual Event at another plant involving the release of a toxic gas and subsequent accounting of plant personnel.

An emergency exists when the licensee's emergency director determines that the threshold of an emergency action level in the licensee's approved emergency action level scheme has been exceeded and declares any one of the four emergency classifications (Notification of Unusual Event, Alert, Site Area Emergency, or General Emergency). The "time of the emergency" refers to the time when a licensee is in an emergency condition following the declaration of an emergency.

Licenses should have the capability to complete a site accountability within 30 minutes of the "start of an emergency." The start of an emergency is usually considered the time when the licensee's emergency director first declares one of the four emergency classifications. However, for accountability purposes, the "start of an emergency" should be considered the time at which the decision is made by the emergency director to conduct a site accountability because the accounting of site personnel is not automatically initiated upon the declaration of an emergency in all cases. As discussed above, licenses should have the capability to perform a site accountability at any time an emergency condition exists and it is deemed necessary and prudent to conduct an accounting of site personnel irrespective of which emergency classification they are in or whether a site evacuation has been ordered.

Previous guidance issued by the NRC staff, in a memorandum dated November 26, 1986, indicated that "onsite" as used in Section II.J.5 of NUREG-0654/FEMA-REP-1, Revision 1, can be interpreted as referring to personnel within the protected area.

5.0 **SUMMARY AND CONCLUSION:**

Based upon the guidance criteria of NUREG-0654/FEMA-REP-1, Revision 1, licenses are to be able to conduct an evacuation of onsite non-essential personnel in the event of a SAE or GE. In addition, it is the staff's position that licenses should have the capability to account for all individuals onsite during any emergency condition and determine the names of missing individuals within 30 minutes of the decision to conduct a site accountability. The capability to perform a site accountability should not be linked to a site evacuation because there are situations where it may not be advisable for safety reasons to evacuate the site but it may be necessary to perform an accounting of site personnel. By having this capability, licenses can perform an accountability at any time during an emergency as the situation warrants. Once a decision has been made to initiate an accountability, the objective should be to complete the accountability of all individuals onsite within the protected area within 30 minutes.

Our review of the ANOSEP, Revision 24, and supporting information indicates that apparently the licensee can only perform a site accountability when a site evacuation is ordered. This is inconsistent with the guidance criteria of NUREG-0654/FEMA-REP-1, Revision 1, and is not considered to be prudent emergency planning practice for the protection of emergency workers. In addition, the licensee appears to have difficulty in meeting the 30 minute guideline for conducting an accountability of onsite personnel based on previous inspection reports.

The licensee should be requested to provide information to justify that their approach for performing a site accountability at Arkansas Nuclear One is an acceptable method for meeting emergency planning standard 10 CFR 50.47(b)(10) in view of the guidance expressed in this evaluation. In addition, the licensee should be requested to provide information on how deficiencies identified as a result of exercises or drills are corrected in accordance with emergency planning standard 10 CFR 50.47(b)(10).

Principal Contributor: F. Kantor, IOLB/DIPM/NRR

Date: February 22, 2000