

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of)	
)	
Entergy Operations, Inc.)	Docket Nos. 50-313
)	and 50-368
)	
(Arkansas Nuclear One,)	License Nos. DPR-51
Units 1 and 2))	and NPF-6
)	

CONFIRMATORY ORDER MODIFYING POST-TMI REQUIREMENTS
PERTAINING TO CONTAINMENT HYDROGEN MONITORS

I.

Entergy Operations, Inc. (the Licensee), is the holder of Facility Operating License Nos. DPR-51 and NPF-6 issued by the Nuclear Regulatory Commission (NRC or Commission) pursuant to 10 CFR Part 50. The licenses authorize the operation of Arkansas Nuclear One, Units 1 and 2 (ANO-1, ANO-2), located in Pope County, Arkansas.

II.

As a result of the accident at Three Mile Island, Unit 2 (TMI-2), the NRC issued NUREG-0737, "Clarification of TMI Action Plan Requirements" (November 1980). Generic Letters 82-05 and 82-10, issued on March 17, and May 5, 1982, respectively, requested licensees of operating power reactors to furnish information pertaining to their implementation of specific TMI Action Plan items described in NUREG-0737. Orders were issued to licensees confirming their commitments made in response to the generic letters. Orders to the Licensee issued on March 14, 1983, require the Licensee to implement and maintain the various TMI Action Plan items, including Item II.F.1, Attachment 6 pertaining to monitoring of hydrogen concentration in containment.

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Significant improvements have been achieved since the TMI accident in the areas of understanding risks associated with nuclear plant operations and developing better strategies for managing the response to potentially severe accidents at nuclear plants. Recent insights pertaining to plant risks and alternate severe accident assessment tools have led the NRC staff to conclude that some TMI Action Plan items can be revised without reducing, and perhaps enhancing, the ability of licensees to respond to severe accidents. The NRC's efforts to oversee the risks associated with nuclear technology more effectively and to eliminate undue regulatory costs to licensees and the public have prompted the NRC's decision to revise the post-TMI requirement related to establishing indication of hydrogen concentration in containment.

The confirmatory Orders of March 14, 1983 imposed requirements upon the Licensee for having continuous indication of hydrogen concentration in the containment atmosphere provided in the control room, as described by TMI Action Plan Item II.F.1, Attachment 6. Information about hydrogen concentration supports the Licensee's assessments of the degree of core damage and whether a threat to the integrity of the containment may be posed by combustion of the hydrogen gas. TMI Action Item II.F.1, Attachment 6 states:

If an indication is not available at all times, continuous indication and recording shall be functioning within 30 minutes of the initiation of safety injection.

This requirement to have indication of the hydrogen concentration in containment within 30 minutes following the start of an accident has defined both design and operating characteristics for hydrogen monitoring systems at nuclear power plants since the implementation of NUREG-0737. In addition, the technical specifications of most nuclear power plants and NRC regulations at 10 CFR 50.44, "Standards for combustible gas control system in light-water-cooled power reactors," require availability of hydrogen monitors.

By letter dated March 2, 1998, Entergy Operations, Inc., requested relief for the two units at ANO from the requirement to have indication of hydrogen concentration in containment within 30 minutes of the initiation of safety injection. Specifically, the Licensee requested a 90-minute limit for indication of hydrogen concentration in containment. The technical basis for this request was that the actions necessary to establish the hydrogen indication are a distraction for control room operators from more important tasks during the initial attempts to respond to an event and that information provided by the monitors is not used until later stages of responding to an accident.

The Licensee's request of March 2, 1998, was made in conjunction with Task Zero of the Risk-Informed, Performance-Based Regulation Pilot Program, an initiative undertaken by the NRC and the Nuclear Energy Institute to improve the incorporation of risk-informed and performance-based insights into the regulation of nuclear power plants. Because the licenses for ANO-1 and ANO-2 were modified by the Orders of March 14, 1983, imposing TMI Action Plan Item II.F.1, Attachment 6, the staff informed the Licensee by letter dated July 22, 1998, that it was necessary to submit an application for an amendment to the operating licenses of ANO-1 and ANO-2 in accordance with 10 CFR 50.90 in order to modify the time limit for post-accident hydrogen monitoring. Upon further reflection, however, the NRC staff has decided that it could act upon this request more expeditiously by issuance of this Order.

On the basis of the NRC staff's review of information provided by the Licensee, consideration of the lessons learned since the TMI-2 accident pertaining to severe accident management and emergency planning, and in order to make NRC licensing and regulatory oversight more efficient, the staff concludes that the Licensee should have the flexibility and assume the responsibility for determining the appropriate time limit for indication of hydrogen concentration in containment, such that control room personnel are not distracted from more

important tasks in the early phases of accident mitigation, and decisionmakers, mostly outside the control room, are able to benefit from having useful information on hydrogen concentration. Because the appropriate balance between control room activities and longer term management of the response to severe accidents can best be determined by the Licensee, the NRC staff has determined that the Licensee may elect to adopt a risk-informed functional requirement in lieu of the current 30 minute time limit for indication of hydrogen concentration as imposed by the Orders dated March 14, 1983, and as described by TMI Action Item II.F.1, Attachment 6 in NUREG-0737. The applicable functional requirement is as follows:

Procedures shall be established for ensuring that indication of hydrogen concentration in the containment atmosphere is available in a sufficiently timely manner to support the role of the information in the Arkansas Nuclear One Emergency Plan (and related procedures) and related activities such as guidance for severe accident management. Hydrogen monitoring will be initiated on the basis of (1) the appropriate priority for establishing indication of hydrogen concentration within containment in relation to other activities in the control room, (2) the use of the indication of hydrogen concentration by decisionmakers for severe accident management and emergency response, and (3) insights from experience or evaluation pertaining to possible scenarios that result in significant generation of hydrogen that would be indicative of core damage or a potential threat to the integrity of the containment building. Affected licensing-basis documents and other related documents will be appropriately revised and/or updated in accordance with applicable NRC regulations.

The Licensee's technical specifications and 10 CFR 50.44 require the Licensee to maintain the ability to monitor hydrogen concentration in containment. However, the details pertaining to the design and manner of operation of the hydrogen monitoring system are determined by the Licensee.

III.

Following various discussions with the staff, the Licensee submitted a letter dated September 9, 1998, in which it provided a commitment to operate and maintain the containment hydrogen monitors for ANO-1 and ANO-2 in accordance with the applicable functional

requirement described in Section II above. The Licensee stated that the adoption of the functional requirement statement would initially result in extending the time requirement for hydrogen monitors from 30 minutes to 90 minutes after the initiation of safety injection.

I find that the Licensee's commitment as set forth in its letter of September 9, 1998, is acceptable and conclude that with this commitment the plant's safety is reasonably assured. In view of the foregoing, I have determined that public health and safety require that the Licensee's commitment be confirmed by this Order. During its discussions with the NRC staff, the Licensee agreed to waive its right to a hearing with respect to issuance of this Order.

IV.

Accordingly, pursuant to Sections 103, 104b, 161b, 161i, 161o, and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202 and 10 CFR Part 50, IT IS HEREBY ORDERED that:

- (1) NRC License Nos. DPR-51 and NPF-6 are modified as follows:

The Licensee may elect to either maintain the 30-minute time limit for indication of hydrogen in containment, as described by TMI Action Plan Item II.F.1, Attachment 6, in NUREG-0737 and required by the Confirmatory Orders of March 14, 1983, or modify the time limit in the manner specified in Sections II and III of this Order.

- (2) The licensee's commitments in its letter of September 9, 1998, see Section III, above, are confirmed.

The Director, Office of Nuclear Reactor Regulation, may, in writing, relax or rescind any of the above conditions upon demonstration by the Licensee of good cause.

V.

Any person adversely affected by this Confirmatory Order, other than the Licensee, may request a hearing within 20 days of its issuance. Where good cause is shown, consideration will be given to extending the time to request a hearing. A request for extension of time must be

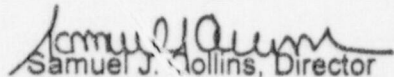
be made in writing to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, and include a statement of good cause for the extension. Any request for a hearing shall be submitted to the Secretary, U.S. Nuclear Regulatory Commission, ATTN: Chief, Rulemakings and Adjudications Staff, Washington, D.C. 20555-0001. Copies of the hearing request shall also be sent to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; to the Deputy Assistant General Counsel for Hearings and Enforcement at the same address; to the Regional Administrator, NRC Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; and to Nicholas S. Reynolds, Esquire, Winston and Strawn, 1400 L Street, N.W., Washington, DC 20005-3502, attorney for the Licensee. If such a person requests a hearing, that person will set forth with particularity the manner in which his interest is adversely affected by this Order and will address the criteria set forth in 10 CFR 2.714(d).

If the hearing is requested by a person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing will be whether this Confirmatory Order should be sustained.

In the absence of any request for hearing, or written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above will be final 20 days

from the date of this Order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV will be final when the extension expires if a hearing request has not been received.

FOR THE NUCLEAR REGULATORY COMMISSION


Samuel J. Hollins, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
This 28th day of September 1998.

September 30, 1998

MEMORANDUM TO: Rules and Directives Branch
 Division of Administrative Services
 Office of Administration

FROM: Office of Nuclear Reactor Regulation

SUBJECT: **ENERGY OPERATIONS, INC. - ARKANSAS NUCLEAR ONE UNITS 1&2**

One signed original of the *Federal Register* Notice identified below is attached for your transmittal to the Office of the Federal Register for publication. Additional conformed copies (**Five**) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for submission of Views on Antitrust matters.
- Notice of Consideration of Issuance of Amendment to Facility Operating License. (Call with 30-day insert date).
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Order.
- Exemption.
- Notice of Granting Exemption.
- Environmental Assessment.
- Notice of Preparation of Environmental Assessment.
- Receipt of Petition for Director's Decision Under 10 CFR 2.206.
- Issuance of Final Director's Decision Under 10 CFR 2.206.
- Other: _____

DOCKET NOS. 50-313 and 50-368

Attachment(s): As stated

Contact: **W. Reckley**
 Telephone: **415-1314**

DOCUMENT NAME: ARMA1267.LTR & ORD

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