UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the matter of	)	Docket Nos. 50-269, 50-270,
	)	and 50-287
Duke Energy Corporation	)	
	)	
(Oconee Nuclear Station,	)	License Nos. DPR-38
Units 1, 2, and 3)	)	DPR-47
	)	DPR-55

CONFIRMATORY ORDER MODIFYING POST-THREE MILE ISLAND REQUIREMENTS PERTAINING TO CONTAINMENT HYDROGEN MONITORS

I.

Duke Energy Corporation (Duke or the licensee) is the holder of Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 issued by the Nuclear Regulatory Commission (NRC or Commission) pursuant to 10 CFR Part 50. The licenses authorize the operation of Oconee Nuclear Station (ONS), Units 1, 2, and 3, located in Oconee County, South Carolina.

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," in 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. The Confirmatory Order that was issued to Duke on March 18, 1983, required the licensee to implement and maintain the various TMI Action Plan Items, including Item II.F.1, Attachment 6 pertaining to monitoring of the hydrogen concentration in the containment following a safety injection.

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 potential severe accidents at nuclear power plants. Recent insights pertaining to plant risks and 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 understand the risks associated with commercial nuclear power plant operations more effectively and to reduce unnecessary regulatory burden on licensees and the public have prompted the NRC's decision to revise the post-TMI requirement to monitor containment hydrogen concentration.

The Confirmatory Order of March 18, 1983, imposed requirements upon the licensee to have continuous monitoring of containment hydrogen concentration 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 hydrogen gas combustion. 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 monitoring of the hydrogen concentration in the containment within 30 minutes following the start of safety injection 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 regulation 10 CFR 50.44, "Standards for combustible gas control system in light-water-cooled power reactors," require availability of hydrogen monitors.

By letter dated August 4, 1999, Duke used the ANO confirmatory order as guidance to request relief for the three Oconee units from the requirement to have indication of hydrogen concentration in the containment within 30 minutes of the initiation of safety injection. Specifically, the licensee requested that risk-informed insights be used to determine the functional requirements for monitoring of containment hydrogen concentration that would allow extending the monitoring requirement to more than 30 minutes following initiation. The basis for this request was that the additional time would allow the operators to complete their initial accident assessment and mitigation duties before redirecting their attention to the relatively longer-term recovery actions, such as actuating the hydrogen recombiners, that are not needed for at least 24 hours.

Based on the staff's evaluation of the justification provided by the licensee, and improved understanding of insights pertaining to plant risks, severe accident assessment, and emergency planning since the TMI-2 accident, the staff has concluded that the licensee's request should be approved. Giving the licensee the flexibility and responsibility for determining the appropriate time limit for establishing monitoring of containment hydrogen concentration will preclude control room personnel from being distracted from various important tasks in the early phases of accident mitigation, while allowing cognizant personnel, mostly outside the control room, to be aware of hydrogen concentration based on a risk-informed functional assessment at a reasonable time following an accident. 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 establishing monitoring of the hydrogen concentration as imposed by the Order dated March 18, 1983, and as described by TMI Action Item II.F.1, Attachment 6 in NUREG-0737. The appropriate functional requirement is as follows:

Procedures shall be established for ensuring that monitoring of hydrogen concentration in the containment atmosphere is available in a sufficiently timely manner to support the implementation of the Oconee Nuclear Station Emergency Plan (and related procedures) and related activities such as guidance for severe accident management. Hydrogen monitoring will be initiated based on: 1) the appropriate priority for establishing monitoring of hydrogen concentration within the containment in relation to other activities in the control room, 2) the use of the monitoring of hydrogen concentration by decision makers 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 Post Accident Monitoring Instrumentation Technical Specifications and 10 CFR 50.44 require the licensee to maintain the ability to monitor hydrogen concentration in the containment. However, the details pertaining to the design and manner of operation of the hydrogen monitoring system are determined by the licensee.

III.

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:

NRC License Nos. DPR-38, DPR-47, and DPR-55 are modified as follows:

The licensee may elect to either maintain the 30-minute time limit for monitoring of hydrogen in the containment, as described by TMI Action Plan Item II.F.1, Attachment 6, in NUREG-0737 and required by the Confirmatory Order of March 18, 1983, or modify the time limit in the manner specified in Section II of this Order.

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.

IV.

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 extend the time to request a hearing. A request for extension of time must 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 of the Commission, 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 II, Atlanta Federal Center, 23 T 85, 61 Forsyth Street, SW., Atlanta, Georgia 30303-3415, and to Anne W. Cottington, Winston and Strawn, 1200 17th Street, NW., Washington, DC, 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

Original signed by:

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
this 29th day of November 1999.

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FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
this 29th day of November 1999.