Enclosure

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CLASS A DOSE ASSESSMENT MODEL GRAND GULF NUCLEAR STATION UNIT 1 (GGNS-1) DOCKET NO. 50-416 TAC NO.65656

1.0 INTRODUCTION

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In a submittal dated April 10. 1981, the licensee for GGNS-1 committed to provide a Class A dose model as described in NUREG-0654. In September 1981, the licensee provided specific details of the proposed model and in 1985, the licensee reconfirmed their intention to implement a Class A model by the end of the first refueling outage. The model was partially incorporated into the GGNS Emergency Response Facility Information System (ERFIS) at the first refueling outage; however, the model was not implemented by procedure due to the need for further development. Several problems and deficiencies associated with the model were identified by the licensee in their letter of June 22, 1987. The licensee has decided to continue with their existing manual dose method until either a new program is developed or purchased. This safety evaluation provides the NRC staff's review of the licensee's proposed model, plan of action and schedule for implementation of their Class A dose assessment model.

2.0 DISCUSSION AND EVALUATION

In letters dated June 22 and July 31, 1987, the licensee provided information regarding their conformance with NRC requirements and guidance as well as the GGNS operating license with respect to their current dose assessment model and proposed plans and schedule for implementing a new dose assessment model. The present dose assessment method uses a straight line gaussian dose model in conjunction with a hand-held computer (HP-41). The dose assessment program has the capability to perform plume centerline and off-centerline dose calculations within the 10-mile Emergency Planning Zone using real-time meteorological conditions available from several different sources. The program can use source terms or activity levels for determining offsite doses from effluent monitors, offsite monitoring team field measurements, FSAR source terms for unmonitored releases or analyzed accidents, or containment/drywell high-range area radiation monitors. The licensee states that selected health physics, chemistry, operations and other key staff have been trained to perform dose assessment. The licensee indicates that the program is conservative, in that no correction is taken for radioactive decay, building wake or several other assumptions.

The licensee's current dose assessment method (EPP 10-S-01-12, "Offsite Dose Calculations") has been reviewed by the NRC staff on several occasions during routine inspections (see Report No. 50-416/85-15 and 50-417/85-04) and exercises (see Report No. 50-416/85-04, 50-417/85-01 and 50-416/86-40) and found acceptable. It was noted that the licensee's model was slightly different than the model used by the State of Mississippi and the NRC's IRDAM code, however, the differences were documented and well understood. The staff also determined that the dose assessment procedures included the use of detailed meteorological data or default values to produce acceptable dose

8712030025 871127 PDR ADOCK 05000416 PDR PDR projections. The current dose assessment model, however, does not meet the guidance for a Class A model as described in NUREG-0654, Appendix 2.

The licensee proposed in their July 31st letter to develop a new model reflecting the guidance expressed in NUREG-0654 or purchase an accepted industry model which can be modified to meet their needs, accommodate site specific factors and provide real-time assessment of meteorological and radiological conditions. With this new model, the licensee expects to enhance their capability to produce timely and accurate dose projections.

The licensee has committed to implement a new Class A dose assessment model on or before November 1988. This includes software documentation and verification, training and procedure modification. This model will be available for the 1988 annual emergency planning exercise.

3.0 CONCLUSION

For the interim period until the new model is implemented, the staff concludes that the current dose assessment method used by the licensee is adequate to assess actual or potential offsite consequences of a radiological emergency condition at GGNS. In addition, the staff finds the licensee's commitment to upgrade the dose assessment model in accordance with the guidance of NUREG-0654, and the associated completion schedule, to be acceptable.

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Dated: