UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

June 29, 2007

William R. Brian, Vice President
of Operations
Grand Gulf Nuclear Station
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION - NRC EXAMINATION REPORT 05000416/2007-301

Dear Mr. Brian:

On May 24, 2007, the U. S. Nuclear Regulatory Commission (NRC) completed an examination at your Grand Gulf Nuclear Station. The enclosed report documents the examination findings, which were discussed on May 24 and June 15, 2007, with you and members of your staff.

The examination included the evaluation of three applicants for instant senior operator licenses and one applicant for upgrade senior operator licenses. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9. The license examiners determined that one of the four applicants satisfied the requirements of 10 CFR Part 55, "Operators' Licenses," and the appropriate license has been issued.

No findings of significance were identified during this examination.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Anthony T. Gody, Chief
Operations Branch
Division of Reactor Safety

Dockets: 50-416
Licenses: NPF-29

Enclosure:
NRC Examination Report
05000416/2007301

cc w/enclosure:
Executive Vice President
and Chief Operating Officer
Entergy Operations, Inc.
P.O. Box 31995
Jackson, MS 39286-1995

Chief
Energy & Transportation Branch
Environmental Compliance and
Enforcement Division
Mississippi Department of
Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

President
Claiborne County Board of Supervisors
P.O. Box 339
Port Gibson, MS 39150

General Manager, Plant Operations
Grand Gulf Nuclear Station
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, MS 39150

Attorney General
Department of Justice
State of Louisiana
P.O. Box 94005
Baton Rouge, LA 70804-9005

Office of the Governor
State of Mississippi
Jackson, MS 39205

Attorney General
Assistant Attorney General
State of Mississippi
P.O. Box 22947
Jackson, MS 39225-2947

State Health Officer
State Board of Health
P.O. Box 139
Jackson, MS 39205

Director
Nuclear Safety & Licensing
Entergy Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213-8298

Director, Nuclear Safety Assurance
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, MS 39150

Richard Penrod, Senior Environmental
Scientist, State Liaison Officer
Office of Environmental Services
Northwestern State University
Russsell Hall, Room 201
Natchitoches, LA 71497

Lisa R. Hammond, Chief
Technological Hazards Branch
National Preparedness Division
FEMA Region VI
800 N. Loop 288
Denton, TX 76209

Conrad S. Burnside, Chief
Technological Hazards Branch
National Preparedness Division
DHS/FEMA
3003 Chamblee Tucker Road
Atlanta, GA 30341

Electronic distribution by RIV:
Regional Administrator **(BSM1)**
DRP Director **(ATH)**
DRS Director **(DDC)**
DRS Deputy Director **(RJC1)**
Senior Resident Inspector **(GBM)**
Branch Chief, DRP/C **(MCH2)**
Senior Project Engineer, DRP/C **(WCW)**
Team Leader, DRP/TSS **(CJP)**
RITS Coordinator **(MSH3)**
DRS STA **(DAP)**
M. Kunowski, OEDO RIV Coordinator **(MAK3)**
ROPreports
GG Site Secretary **(NAS2)**

SUNSI Review Completed: ___Y___ ADAMS: √ Yes ☐ No Initials: _SMG_____
√ Publicly Available ☐ Non-Publicly Available ☐ Sensitive √ Non-Sensitive

SOE:OB	OE:OB	C:OB	C:PBC	C:OB
SMGarchow/lmb	BTindell	ATGody	MHay	ATGody
/RA/	/RA/	/RA/	/RA/	/RA/
6/19/07	6/25/07	6/24/07	6/25/07	6/28/07

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

EXAMINATION REPORT
U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-416
License:	NPF-29
Report :	05000416/2007-301
Licensee:	Entergy Operations, Inc.
Facility:	Grand Gulf Nuclear Station
Location:	P.O. Box 756 Port Gibson, MS 39150
Dates:	May 21 through June 15, 2007
Inspectors:	S. Garchow, Chief Examiner, Operations Branch B. Tindell, Operations Engineer
Approved By:	Anthony T. Gody, Chief Operations Branch Division of Reactor Safety

SUMMARY OF FINDINGS

ER 05000416/2007-301; 5/21-24,2007; Grand Gulf Nuclear Station; Initial Operator Licensing Examinations.

NRC examiners evaluated the competency of three applicants for instant senior operator licenses and one applicant for an upgrade senior operator license at the Grand Gulf Nuclear Station. The facility licensee developed the written and operating examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9. The written examination was administered by the facility licensee and NRC on May 21, 2007. The NRC examiners administered the operating tests on May 22 - 24, 2007. The license examiners determined that one of the applicants satisfied the requirements of 10 CFR Part 55, and the appropriate license has been issued.

No findings of significance were identified.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other Activities (Initial Operator License Examination)

.1 License Applications

a. Scope

The examiners reviewed the four applications submitted by the licensee for each of the license applicants. The applications were submitted on NRC Form 398, "Personal Qualification Statement," and NRC Form 396, "Certification of Medical Examination by Facility Licensee." The examiners also audited one license application to confirm accurate documentation of the subject applicant's qualifications to satisfy the 10 percent audit requirement for the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes. All control manipulations were performed in the plant.

b. Findings

No findings of significance were identified.

.2 Operator Knowledge and Performance

a. Examination Scope

On May 21, 2007, the facility licensee and NRC proctored the administration of the written examinations to all four applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on June 15, 2007.

The NRC examination team administered the various portions of the operating examination to all four applicants on May 22 - 24, 2007. The three applicants seeking an instant senior operator license participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 10 system tasks, and an administrative test consisting of 5 administrative tasks. The applicant for upgrade senior operator license participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 5 system tasks, and an administrative test consisting of 5 administrative tasks.

b. Findings

One of the applicants passed all parts of the examinations. There were no identified generic weaknesses on the operating examination.

For the written examinations, overall senior reactor operator applicant's average score was 75.8 percent and ranged from 69.0 to 85.0 percent. The average score on the senior operator only portion of the examination was 68.0 percent and ranged from 60.0 to 80.0 percent.

NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Section ES-403, requires the licensee to analyze the validity of any written examination questions that were missed by half or more of the applicants. The licensee conducted this performance analysis and submitted the analysis to the chief examiner on June 15, 2007. The licensee recommended four questions (Exam Questions 44, 65, 90, and 99) to have more than one answer or a different answer be accepted as correct.

The licensee's recommendations and the NRC responses follow:

Reactor/Senior Operator Question 44, missed by three applicants

The facility recommended changing the answer key so that Answers c and d would be considered correct. This change was based on information contained in system training material and the Updated Final Safety Analyses Report. Both sources state controlling reactor pressure is achieved by controlling turbine pressure since the turbine is slaved to the reactor.

NRC Response – The NRC does not agree with the facility's recommendation to accept Answers c and d. Distractor c is incorrect, in that it states the turbine control valves will throttle closed in an effort to control reactor pressure constant. This is incorrect because the electro-hydraulic control system does not sense reactor pressure and consequently, will not attempt to control any process variable in direct response to changes in reactor pressure. The electro-hydraulic control system is designed to maintain turbine throttle pressure constant as sensed at the equalizing header through turbine control valve positioning. For example, if a main steam isolation valve were to close, steady state reactor pressure would increase while turbine header pressure would be maintained constant by the electro-hydraulic control system. Based on the information given in the stem, Answer d is the only correct answer.

Reactor/Senior Operator Question 65, missed by one applicant

The facility recommended changing the answer key to Answers a and c would be considered correct. This recommendation was based on assuming Reactor Recirc Pump B is running and bottom head temperature is not greater than Reactor Recirc Loop B temperature. Therefore, this would mean the difference between the average coolant temperature and Recirc Loop A temperature would be greater than 50 degrees and this would not meet the thermal limit requirements as defined in System Operating Instruction 04-1-01-B33-1.

NRC Response – The recommended change to the answer key was reviewed and it was concluded Answers a and c are both correct. For the reactor to be in Mode 1, Reactor Recirc Pump B must be running or a reactor scram would occur. Given Reactor Recirc Pump B is running, the bottom head region temperature would be

representative of the average coolant and Reactor Recirc Loop B temperatures. According to the referenced procedures, a difference greater than 50 degrees between the average coolant temperature and Reactor Recirc A would impose an excessive thermal transient. Therefore, Answers a and c are correct.

Senior Operator Question 90, missed by two applicants

Following the examination, the facility recommended Answers c and d both be accepted for this question. This recommendation was based on (1) the shift manager being qualified to perform the duties of the control room supervisor; (2) the shift manager is responsible for maintaining the temporary alteration log book; and (3) by practice, the shift manager places the temporary alteration request form in the temporary alteration log book.

NRC Response – This recommended answer key change was reviewed and it was concluded Answer d is the only correct answer. The procedure referenced in the stem of the question states in Steps 6.1.14.b and c - the control room supervisor, by position, is responsible for placing the temporary alteration form in the temporary alteration log book. The shift manager is qualified to perform the duties of the control room supervisor and would, therefore, be responsible for performing this function if acting in the capacity of the control room supervisor. While the shift manager may functionally perform this action, procedurally the control room supervisor is still responsible for ensuring the form is placed in the log book and a copy is sent out. Based on this, Answer d is the only correct answer.

Reactor/Senior Operator Question 99, missed by four applicants

Following the examination, the facility recommended Answer a be accepted as the correct answer instead of Answer c. Accepting Answer a instead of c was based on a procedural recommendation that notification of a safety limit violation be made as soon as possible. As soon as possible would be assumed to be quicker than the unusual event notification time of 15 minutes.

NRC Response – This recommended change to the answer key was reviewed and it was concluded Answer c is the only correct answer. The question asks which of the conditions has “the shortest time limit [emphasis added] for notification.” Procedurally, the shift manager would be expected to notify the NRC as soon as possible, but the actual time limit is 1 hour. Conversely, condition c would require an entry into the emergency plan and that has an associated time limit of 15 minutes. Therefore, Answer c is the only correct answer.

3. Initial Licensing Examination Development

a. Examination Scope

The licensee developed the written examination and operating examination in accordance with NUREG-1021, Revision 9. All licensee facility training and operations staff involved in examination preparation and validation were on a security agreement. The facility licensee submitted the integrated examination outlines on December 20, 2006. The chief examiner reviewed the outlines against the requirements of NUREG-1021, Revision 9, and provided comments to the licensee on December 23, 2006. The facility licensee submitted the draft examination package on January 19, 2007. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, Revision 9, and provided comments to the licensee on February 7, 2007. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of February 12, 2007. The licensee satisfactorily completed comment resolution on March 19, 2007.

b. Findings

Examiners approved the initial examination outline with minor comments and advised the licensee to proceed with the written and operating examination development.

The chief examiner considered the written examination to be adequate and noted that the number of unacceptable questions in the overall submittal was within the acceptable quality range of less than or equal to 20 percent expected by the NRC, with 13 questions requiring significant modification or replacement (13 percent). The senior reactor operator portion of the examination also met the 20 percent threshold because 3 questions out of 25 required replacement or significant modification (12 percent). The reactor operator portion of the examination required replacement or modification for 10 of the 75 (13 percent) reactor operator questions. The majority of questions on the reactor operator examination that required replacement or significant modification (7 questions) involved requiring the reactor operator to have knowledge of the technical specifications. The questions on the senior operator examination that required replacement or significant modification (4 questions) involved various reasons. These comments were discussed with facility licensee representatives.

The chief examiner determined that the operating examinations initially submitted by the licensee were within the range of acceptability expected for a proposed examination.

No findings of significance were identified.

.4 Simulation Facility Performance

a. Examination Scope

The examiners observed simulator performance with regard to plant fidelity during the examination validation and administration.

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Examination Scope

The examiners reviewed examination security for examination development during both the onsite preparation week and examination administration week for compliance with NUREG-1021 requirements. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel during the onsite preparation week.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On May 24, 2007, the examination team presented a debrief to William R. Brian, Vice President of Operations, and other members of the licensee's management staff at the conclusion of the operating test. The licensee acknowledged the findings presented. A subsequent telecom exit was conducted with members of your staff on June 15, 2007. The findings as detailed in this report and applicant performance during the examination were discussed. The examiners confirmed that proprietary information was not provided or examined during the examination process.

4OA7 Licensee-Identified Violations

No findings of significance were identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

Steve Reeves, Manager, Operator Initial Training
Charlie Roberts, Superintendent, Operator Requalification Training
William R. Brian, Vice President of Operations
Tom Tinkersley, Nuclear Training Manager
Mike Rasch, Senior Operations Instructor
Jerome Reed, General Manager