



**TEXAS A&M UNIVERSITY**

Look College of Engineering  
Department of Nuclear Engineering  
3133 TAMU  
College Station, Texas 77843-3133  
(979) 845-4161 FAX (979) 845-6443

Nuclear Engineering  
Health Physics

Radiological Health  
Engineering

October 6, 2006

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20855

Docket No. 50-059

Subject: 2<sup>nd</sup> Revision to Reply to Notice of Violation

- References: (1) Letter Ho Nien to W. E. Burchill, "NRC Routine Inspection Report No. 50-059/2006-201 and Notice of Violation," June 29, 2006.
- (2) Letter W. E. Burchill to USNRC Document Control Desk, Docket No. 50-059, July 28, 2006.
- (3) E-mail K. Witt to W. E. Burchill, "Request for Extension to Reply to a Notice of Violation," August 1, 2006.
- (4) Letter W. E. Burchill to M. Mendonca, "Actions Relative to the AGN-201M Nuclear Reactor, License No. R-23," May 5, 2006.
- (5) Letter W. E. Burchill to M. Mendonca, "TAMU AGN Progress Summary and Plan," June 16, 2003.
- (6) NRC Administrative Letter 95-05, Revision 2, "Revisions to Staff Guidance for Implementing NRC Policy on Notice of Enforcement Discretion," July 27, 1999.
- (7) License No. R-23, "Emergency Plan for Texas A&M University AGN-201M Reactor (Serial #106)," Docket No. 50-59, September, 1984.
- (8) License No. R-23, "AGN-201M Preventive Maintenance Procedures," May, 1980.

A020  
IED1

Gentlemen:

This letter provides a 2<sup>nd</sup> revision to the reply to the two violations stated in the Notice of Violation (NOV) (Ref. 1) which was provided on August 11, 2006, within the extended response time requested in Ref. 2 as approved by Ref. 3. Although this revision concerns only the response to Violation B, the unrevised response to Violation A is included for completeness and convenience of reference.

**Violation A:** Technical Specification Section 6.4.3 concerning audits of the facility by the Reactor Safety Board. The NOV states “no audits have been conducted since the reactor was last operable in 1999.”

The reply to this violation was provided in Ref. 4. As stated in the NOV (Ref. 1), “The NRC has concluded that information regarding the reason for Violation A, the corrective actions taken and planned to correct the violations and prevent recurrence is already adequately addressed on the docket in a letter from you received by the NRC dated May 5, 2006 [Ref. 4].”

Further corrective action is the submittal to the NRC of a request, which is enclosed, for a Notice of Enforcement Discretion (NOED) relative to this and other specified Technical Specification sections. Full compliance will be achieved on a date to be determined according to the NRC response to this request.

**Violation B:** 10 CFR 50.54(q) concerning following and maintaining emergency plans, specifically the Texas A&M University AGN-201M Emergency Plan Section 10.1. The NOV states “the licensee stated that emergency drills [evacuation drills] had not been conducted annually. The licensee had not conducted an emergency drill [evacuation drill] since the reactor was last operated in 1999. The licensee also could not find documentation indicating that the required retraining and re-orientation of facility emergency response personnel was being completed. The licensee indicated that this training had not been conducted since the reactor was last operated in 1999.”

The reply to this violation was partially provided in Ref. 4. As stated in the NOV (Ref. 1), “In that letter [Ref. 4], you also provided information regarding part of the reason for violation B.” The remaining reply to Violation B is provided below.

(1) The reason for the violation: Section 10.1 of the AGN reactor Emergency Plan (Ref. 7) states, “This Evacuation Drill is detailed in and performed in accordance with the AGN-201M Maintenance Procedures, annually, but at intervals not to exceed sixteen (16) months.” As stated in Ref. (4) “An annotated copy of the AGN reactor emergency plan found in the files of the former AGN Reactor Supervisor indicates that the AGN Reactor Supervisor deliberately suspended evacuation drills because the AGN reactor was not operable, i.e., it was shutdown and partially dismantled.” During the period of time that the AGN reactor is disassembled the release of radioactivity or the increase of radiation levels that would necessitate evacuation due to internal events, i.e., caused by malfunctions of the reactor, is physically impossible unless there were a passive structural failure.

(2) Corrective steps taken and results achieved:

- a. The AGN reactor Emergency Plan was reviewed to determine events that may require evacuation. Table 4.1 of the AGN reactor Emergency Plan (Ref. 7) provides a list of implementing procedures for the Emergency Plan. These procedures were reviewed to determine which events require evacuation. The procedures for the following external events, i.e., caused by conditions external to the reactor, specify evacuation:
  - i. EA-1, "Reactor Facility Fire"
  - ii. EA-2, "Bomb Threat"
  - iii. EA-3, "Civil Disturbance"
  - iv. EA-4, "Severe Natural Phenomenon"
  - v. EA-5, "General Emergency Alert"
  - vi. RE-1, "Reactor Emergency"
- b. The implementing procedures listed in Corrective Action (a) were reviewed to determine the evacuation instructions specified therein. These instructions vary among the implementing procedures and include the following:
  - i. "The Reactor Supervisor or senior person present shall use the intercom/PA system to order the evacuation of nonessential personnel from the Reactor Facility" (EA-1, EA-3)
  - ii. "Notify the Reactor Supervisor or senior person present to use the intercom/PA system to order the evacuation of the Reactor Facility personnel to the Nuclear Engineering Office, Room 129." (EA-2)
  - iii. "The Reactor Supervisor, Head of the Department of Nuclear Engineering or his designated alternate, and the Radiological Safety Officer shall take appropriate action to protect personnel and equipment from the apparent hazards." (EA-4, EA-5)
  - iv. "If the occurrence damages or threatens to damage the reactor or systems containing radioactive materials, activate procedure (RE-1) Reactor Emergency." (EA-1, EA-4, EA-5)
  - v. "The Reactor Supervisor or senior person present will [sound] the evacuation alarm by turning red trip pointer on the "skirt monitor" count rate meter fully counterclockwise." (RE-1)

Detailed evacuation actions and personnel assembly locations are specified in implementing procedure RE-1.

- c. The AGN reactor Preventive Maintenance Procedures (Ref. 8) were reviewed to determine the evacuation drill instructions specified therein. The following procedures provide relevant instructions:
- i. EVAC-12, "Evacuation Procedure Drill"
  - ii. EPEX-24, "Emergency Plan Exercise"
- d. The procedures listed in Corrective Action (c) were reviewed to determine the steps required for planning and conducting either an emergency or an evacuation drill. Both procedures have a Note that states that the procedures can be performed in conjunction with one another; however, simultaneous performance is not required. The steps include the following:
- i. "At least 30 days prior to the scheduled emergency plan exercise, convene a meeting of the Head of the Nuclear Engineering Department, the Radiological Safety Officer, the Reactor Supervisor, and a representative of the Reactor Safety Board. This committee shall decide on which aspects of the emergency plan are to be tested and an appropriate scenario or outline of events shall be drawn up. The Radiological Safety Officer shall coordinate the support of appropriate offsite agencies." (EPEX-24)
  - ii. "About two weeks prior to the evacuation drill, post notices in the ground floor and first floor nuclear engineering labs explaining the evacuation procedure and that an unannounced drill will be taking place." (EVAC-12)
  - iii. "Reactor Supervisor sound the evacuation alarm and follow the evacuation procedure as detailed in emergency procedure Reactor Emergency (RE-1)." (EVAC-12)
  - iv. Steps in both procedures require recording response times, actions taken or events of the drill, and notes concerning general adequacy or deficiencies for post-drill critique and correction of the procedures.
  - v. Steps in both procedures require the Reactor Supervisor to record appropriate data in the Reactor Maintenance Log and to sign off the Certification Log.
- e. Based on the reviews stated in Corrective Actions (a), (b), (c), and (d) an emergency drill will be planned. Depending of the conclusions reached by the planning meeting cited in Action (d)(i) above, the emergency drill may be limited to an evacuation drill. The personnel designated to participate in this drill are: (1) the Interim Reactor Supervisor, (2) the Nuclear Engineering Department Head, (3) the Chair of the Nuclear Engineering Department Laboratory Management Committee, (4) the Nuclear Engineering Department TEES Technical Laboratory

Manager (designated to be the AGN Reactor Supervisor in training), and (5) the TAMU Radiological Safety Officer.

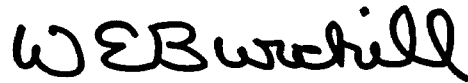
f. An emergency drill will be conducted no later than December 31, 2006.

(3) Corrective steps to be taken to avoid further violations: Following the emergency drill to be conducted no later than December 31, 2006, evacuation drills and associated retraining and re-orientation will be re-established according to the Texas A&M University AGN-201M Emergency Plan. The results of each drill will be reported to the Reactor Safety Board (RSB) at its next regularly-scheduled meeting following each drill. The drills will be verified by periodic audits by the RSB as required by the reactor's Technical Specifications, Section 6.4.3 (b) following the expiration of the NOED requested in response to Violation A.

(4) Date when full compliance will be achieved: On or before December 31, 2006.

Enclosed is a request for an NOED relative to specified sections of the Technical Specifications prepared according to guidance provided in Ref. (6). Thank you for your consideration of this request. Please telephone me at (979) 845-1670 if you have questions.

Sincerely,



William E. Burchill  
Department Head and HRTI Professor  
Nuclear Engineering

Enclosure

xc: Kevin M. Witt, NRC Inspector  
William S. Charlton, Chair, NUEN Laboratory Management Committee  
I. S. Hamilton, Interim Reactor Supervisor  
Theresa A. Maldonado, Chair, TAMU Reactor Safety Board

REQUEST FOR A  
NOTICE OF ENFORCEMENT DISCRETION  
Docket No. 50-059  
August 11, 2006  
Revision 2, October 6, 2006

The licensee of the Texas A&M University AGN-201M Reactor (Serial #106), licensed to operate under License No. R-23, hereby requests a Notice of Enforcement Discretion (NOED) to suspend specified requirements of License No. R-23, Appendix A, Technical Specifications for the limited period of time when the AGN reactor is dismantled and inoperable. This period of noncompliance will be temporary and nonrecurring. The noncompliances will not adversely affect public health and safety.

1. The TS or other license conditions that will be violated.

TS 6.3 Training

TS 6.4.3 Audits

2. The circumstances surrounding the situation

The AGN reactor was last operated August 25, 1999. Since that time it has been shutdown for upgrades. It is currently partially dismantled; however, the fuel (except for the control rods) is secure in the reactor vessel and shielding. Under these conditions it is not possible to conduct training as required by TS 6.3. As described in Ref. (1) appropriate cognizance of the AGN reactor by the Texas A&M University Reactor Safety Board (RSB) is being maintained in lieu of compliance with TS 6.4.3 because of the current dismantled state of the reactor.

3. The safety basis for the request

The safety basis for the request is that the physical state of the AGN reactor makes the release of radioactivity or the increase of radiation levels have an extremely low probability. The AGN reactor can not be made critical in its current dismantled state. In addition, the Texas A&M University Radiation Safety Office (RSO) conducts a radiation protection program for the AGN reactor which includes regular, periodic radiation surveys and other activities which satisfy all regulatory requirements. This request is consistent with TS 4.0, Surveillance Requirements, which states "Actions specified in this section are not required to be performed if during the specified surveillance period the reactor has not been brought critical or is maintained in a shutdown condition extending beyond the specified surveillance period."

4. Basis for conclusion of no public health and safety detriment and no significant hazard

The AGN reactor can not be made critical in its current dismantled state. The physical state of the AGN reactor makes the release of radioactivity or the increase of radiation levels have an extremely low probability. Regular, periodic surveys of radiation levels surrounding the AGN reactor are being conducted by the RSO.

## 5. Basis for conclusion of no adverse consequences to the environment

The AGN reactor can not be made critical in its current dismantled state. The physical state of the AGN reactor makes the release of radioactivity or the increase of radiation levels have an extremely low probability. Regular, periodic surveys of radiation levels surrounding the AGN reactor are being conducted by the RSO.

## 6. Any proposed compensatory measure(s)

Relative to TS 6.3: As committed in Ref. (1), the licensee will conduct a new operator training class for the AGN reactor. The licensee has identified potential candidates for this new operator training class including (1) two faculty members, (2) two staff members, and (3) several students. The remaining licensed AGN reactor operator will assist in developing and conducting this class while simultaneously re-establishing his requalification training. Materials from the formerly conducted requalification training program will be applied. Required reactivity manipulations will be conducted using the Texas A&M University TRIGA reactor prior to the AGN reactor being operable. The AGN reactor will remain shutdown and inoperable until a sufficient number of candidates have passed their AGN reactor operator license examination.

Relative to TS 6.4.3: As described in Ref. (1), cognizance of the AGN reactor has been maintained by the RSB. The RSB meets at least annually, and descriptions of specific actions taken by the RSB are provided in Ref. (1). These practices will continue.

## 7. Justification for the duration of the noncompliance

As stated in Ref. (1), the AGN reactor is currently partially dismantled; however, the fuel (except for the control rods) is secure in the reactor vessel and shielding. A reactor upgrade was initiated in early 2001 following receipt of a U.S. Department of Energy (DOE) University Reactor Instrumentation Grant. The upgrade involves five phases: (1) remove old equipment, (2) design new circuits and systems, (3) build new control and instrumentation subassemblies, (4) test subassemblies, and (5) reassemble and test the integrated system. Phases 1 and 2 were completed and phase 3, partially completed in 2002 when work was suspended due to insufficient funds. Work was reinitiated in early 2003 using department funding. Phase 3 was completed and phase 4, partially completed in 2004 when work was again suspended due to personnel unavailability. Work remains suspended at this time. A revision to the AGN reactor upgrade plan is being prepared and will be submitted to you as soon as possible. That plan will define and limit the duration of noncompliance.

## 8. Statement that request has been approved by facility safety review organization

The request has been submitted to the Chair of the RSB who will request that it be reviewed by the RSB members before October 20, 2006. Approval is expected, and the NRC will be notified accordingly. If approval is denied, the request will be promptly withdrawn.

#### 9. NOED criteria for appropriate plant conditions

The AGN reactor is in a shutdown condition (NOED Situation 2, Ref. 2, Sect. 2.0). The NOED is intended to provide temporary relief from actions that are unnecessary, and may be inappropriate, for the AGN reactor conditions in that these actions do not provide an overall benefit to safety in the shutdown and dismantled condition of the AGN reactor.

#### 10. Follow-up license amendment

No follow-up license amendment will be submitted.

#### References

- (1) Letter W. E. Burchill to M. Mendonca, "Actions Relative to the AGN-201M Nuclear Reactor, License No. R-23," May 5, 2006.
- (2) NRC Administrative Letter 95-05, Revision 2, "Revisions to Staff Guidance for Implementing NRC Policy on Notice of Enforcement Discretion," July 27, 1999.