

January 9, 2002

Dr. Bernard W. Wehring, Interim Director
Nuclear Reactor Program
Department of Nuclear Engineering
North Carolina State University
P. O. Box 7909
Raleigh, NC 27695-7909

SUBJECT: NRC INSPECTION REPORT NO. 50-297/2001-202

Dear Dr. Wehring:

This letter refers to the inspection conducted on December 10-13, 2001, at your PULSTAR research reactor facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concerns or noncompliances of NRC requirements were identified. No response to this letter is required.

In accordance with 10 CFR 2.790 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 (the Public Electronic Reading Room) <http://www.nrc.gov/NRC/ADAMS/index.html>.

Should you have any questions concerning this inspection, please contact Craig Bassett at (404) 562-4712.

Sincerely,

/RA/

Patrick M. Madden, Section Chief
Non-Power Reactor Section
Operating Reactor Improvements
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-297
License No. R-120

Enclosure: NRC Inspection Report No. 50-297/2001-202

cc w/enclosure:
Please see next page

North Carolina State University

Docket No. 50-297

Dr. P. Turinsky, Head
Nuclear Engineering Department
North Carolina State University
P. O. Box 7909
Raleigh, NC 27695-7909

Amy Orders
Radiation Safety Officer
North Carolina State University
P. O. Box 7909
Raleigh, NC 27695-7909

Test, Research, and Training
Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

Dayne H. Brown, Director
Division of Radiation Protection
Department of Environment,
Health, and Natural Resources
P. O. Box 27687
Raleigh, NC 27611-7687

January 9, 2002

Dr. Bernard W. Wehring, Interim Director
Nuclear Reactor Program
Department of Nuclear Engineering
North Carolina State University
P. O. Box 7909
Raleigh, NC 27695-7909

SUBJECT: NRC INSPECTION REPORT NO. 50-297/2001-202

Dear Dr. Wehring:

This letter refers to the inspection conducted on December 10-13, 2001, at your PULSTAR research reactor facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concerns or noncompliances of NRC requirements were identified. No response to this letter is required.

In accordance with 10 CFR 2.790 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 (the Public Electronic Reading Room) <http://www.nrc.gov/NRC/ADAMS/index.html>.

Should you have any questions concerning this inspection, please contact Craig Bassett at (404) 562-4712.

Sincerely,
/RA/
Patrick M. Madden, Section Chief
Non-Power Reactor Section
Operating Reactor Improvements
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-297
License No. R-120
Enclosure: NRC Inspection Report No. 50-297/2001-202

cc w/enclosure:
Please see next page

Distribution w/encl:

PUBLIC	RORP r/f	AAdams	CBassett
PDoyle	TDragoun	WEresian	FGillespie
SHolmes	EHylton	Plsaac	WBeckner
DMatthews	MMendonca	EDO (O16-E15)	PMadden
BDavis (Cover letter only) - BLD		NRR enforcement coordinator (Only for IRs with NOV's, O10-H14)	

ACCESSION NO.: ML020040252

TEMPLATE #: NRR-106

OFFICE	RORP:RI	RORP:LA	RORP:SC
NAME	CBassett:rd	EHylton	PMadden
DATE	01/08/2002	01/07/2002	01/08/2002

C = COVER

E = COVER & ENCLOSURE
OFFICIAL RECORD COPY

N = NO COPY

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Docket No: 50-297

License No: R-120

Report No: 50-297/2001-202

Licensee: North Carolina State University

Facility: PULSTAR Reactor

Location: North Carolina State University, Raleigh, NC

Dates: December 10-13, 2001

Inspector: Craig Bassett

Approved by: Patrick M. Madden, Section Chief
Non-Power Reactor Section
Operating Reactor Improvements
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

North Carolina State University
Report No. 50-297/2001-202

The primary focus of this routine, announced inspection was the on-site review of selected aspects of the licensee's Class II non-power research reactor operation including: organization and staffing; review and audit functions; procedures; radiation protection and ALARA programs; effluent and environmental monitoring; the shipment of radioactive material; the safeguards and security program; and the material control and accounting program.

Organization and Staffing

- The licensee's organization and staffing remain in compliance with the requirements specified in the Technical Specifications Section 6.1.

Review and Audit Functions

- Audits were being conducted by the Radiation Safety Committee and the Reactor Safety and Auditing Committee in compliance with the requirements specified in the Technical Specifications.
- Annual reviews of the Radiation Protection Program were being completed by the licensee as required by 10 CFR 20.

Procedures

- Licensee Health Physics procedures and changes thereto were being reviewed and approved by the Radiation Safety Committee and the Reactor Safety and Auditing Committee as required.

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met the regulatory requirements specified in 10 CFR Parts 19 and 20.
- Personnel dosimetry was being worn as required and doses were well within the licensee's procedural action levels, and NRC's regulatory limits.
- Radiation monitoring equipment was being maintained and calibrated as required.
- The Radiation Protection Program being implemented by the licensee satisfied regulatory requirements.

Effluent and Environmental Monitoring

- Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and Technical Specification limits.

Transportation of Radioactive Materials

- Radioactive material, including waste, was transferred to the Campus Radiation Safety Division for shipment and/or disposal according to procedure.

Safeguards and Security

- The NRC-approved security program at the facility was acceptably carried out.

Material Control and Accountability

- No deficiencies were identified in the licensee's Material Control and Accounting program.

REPORT DETAILS

Summary of Plant Status

The licensee's one megawatt (1 MW) PULSTAR research reactor continues to be operated in support of undergraduate instruction and laboratory experiments, reactor operator training, and various types of research. During the inspection, the reactor was started-up, operated, and shut down as required to support experiments and research.

1. Changes, Organization, and Staffing

a. Inspection Scope (Inspection Procedure (IP) 69001)

The inspector reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Technical Specification (TS) Section 6.1, Amendment 14, dated May 29, 2001, were being met:

- organizational structure
- management responsibilities
- staffing requirements for safe operation of the research reactor facility

b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that management responsibilities and the organization at the facility had not changed since the previous NRC inspection in the area of radiation protection in February 2000 (Inspection Report No. 50-297/00-201). The inspector noted that the positions of the Director and the Associate Director were vacated in December 2000. A senior faculty member was subsequently appointed as Interim Director and the Reactor Health Physicist is serving as the Associate Director. A personnel search located a replacement for the Director position and the person selected will assume those responsibilities in early 2002. The search is still in progress to find a replacement for the Associate Director.

The licensee is contemplating changing the title, and thus the responsibilities, of the Associate Director. The new title would be Manager of Engineering and Operations. Should that occur, the licensee will need to submit a change to the facility Technical Specifications because the position of Associate Director is specifically mentioned therein.

With respect to facility staffing, the inspector determined, after reviewing operating records and logs and discussing facility operations with licensee personnel, that the staffing at the facility was acceptable to support the ongoing activities. The staffing met the requirements specified in the TS Section 6.1.

c. Conclusions

The licensee's organization and staffing remain in compliance with the requirements specified in the TS Section 6.

2. Review and Audit Functions

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the audits and reviews stipulated in the requirements of TS Section 6.2 were being completed:

- Radiation Safety Committee (RSC) meeting minutes for the last two years
- Reactor Safety and Audit Committee (RSAC) meeting minutes for the past two years
- PULSTAR Special Procedure SP 2.1, "Review and Approval of Documentation," Revision (Rev) 8, with an effective date of March 22, 2001
- PULSTAR Health Physics Procedure HP 4, "Radiation Protection Program Self Assessment," Rev 0, with an effective date of June 1, 1998
- TS duties specified for the RSC and the RSAC

b. Observations and Findings

The inspector reviewed the RSC's and RSAC's meeting minutes from January 2000 to the present. These meeting minutes showed that each committee met as required by the TSs with a quorum being present. The inspector also noted that, during the meetings, the RSC and the RSAC had considered the types of topics outlined by the TSs.

It was noted that both committees completed audits of generally different but complimentary aspects of the reactor facility operations and programs. The inspector noted that, since the last NRC inspection, audits had been completed in those areas specified in the TSs. Audits were varied so that all aspects of the licensee's safety program were reviewed every two years. The inspector noted that the audits and the resulting findings were acceptable. If the audit findings identified deficiencies or contained recommendations for possible improvements, the licensee responded and took corrective actions as necessary.

The inspector also verified that the licensee had completed annual reviews of the Radiation Protection Program as required by 10 CFR Part 20. All aspects of the program had been reviewed and areas were noted where improvements could be made. Commitments and/or improvements from the review completed the previous year were reviewed and progress was noted. The reviews were acceptable.

c. Conclusions

Audits were being conducted by the RSC and the RSAC according to the requirements specified in the TS. Annual reviews of the Radiation Protection Program were being completed by the licensee as required by 10 CFR Part 20.

3. Procedures

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the requirements of TS Section 6.3 were being met concerning written procedures:

- PULSTAR Health Physics Procedure HP 1, "Radiation Protection Program," Rev 3, with an effective date of February 4, 2000
- PULSTAR Health Physics Procedure HP 2, "Use of Irradiation Facilities," Rev 1, with an effective date of January 1, 2000
- PULSTAR Health Physics Procedure HP 7, "Leak Testing, Inventory, and Accountability of Special Nuclear Material and Licensed Sealed Sources," Rev 1, with an effective date of April 18, 2001
- PULSTAR Health Physics Procedure HP 8, "Radiation Work Permit and Protective Clothing," Rev 1, with an effective date of February 4, 2000
- PULSTAR Health Physics Procedure HP 9, "Respirator Use and Bioassay," Rev 2, with an effective date of February 4, 2000
- PULSTAR Health Physics Procedure HP 10, "Calibration, Operation, and Maintenance of Radiation Survey and Chemistry Instruments," Rev 2, with an effective date of February 1, 2000
- the process used to revise, review, and approve facility procedures

b. Observations and Findings

The inspector determined that the licensee's written procedures concerning health physics (HP) and radiation protection activities were being revised as required by procedures. New procedures and major changes were reviewed and approved by the RSAC and the RSC. Minor changes did not require approval but were reviewed by the two committees. These reviews and approvals were being documented in the minutes of the respective committees.

c. Conclusions

The licensee's Health Physics procedures and changes thereto were being reviewed and approved by the RSC and RSAC as required.

4. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with 10 CFR Part 20 and TS Sections 3.5 and 4.4 requirements and procedural requirements:

- health physics survey records documented on the forms in Attachments 1-6 of PULSTAR Health Physics Procedure HP 3, "Radiological Surveys," Rev 0, with an effective date of June 1, 1998
- Nuclear Reactor Program (NRP) dosimetry records for 2000 through the third quarter of 2001
- calibration and periodic check records for radiation monitoring instruments documented on the applicable forms in Attachments 1-17 of Health Physics Procedure HP 10
- Radiation Protection Program outlined in Health Physics Procedure HP 1 and in the NCSU Radiation Safety Manual
- ALARA Policy stated in Health Physics Procedure HP 1

The inspector also toured the facility to note any changes that may have been made and observed the use of dosimetry and radiation monitoring equipment. Licensee personnel were interviewed and radiological signs and postings were observed as well.

b. Observations and Findings

(1) Surveys

The inspector reviewed the weekly general area contamination surveys, monthly contamination surveys of uncommon areas, monthly general area radiation surveys, and quarterly radiation surveys of the perimeter and unrestricted areas for the years 2000 and 2001 to date. The surveys had been completed by the Reactor Health Physicist (RHP) as required by Health Physics Procedure HP 1 and the results were documented on the appropriate forms. Results of the surveys were evaluated and corrective actions taken when readings or results exceeded set action levels. During the inspection, the inspector conducted a radiation survey of the Reactor Bay and compared the readings detected with those found by the licensee. The results were comparable and no anomalies were noted.

(2) Postings and Notices

The inspector reviewed the postings at the entrances to various controlled areas including the Control Room, the Reactor Bay, and radioactive material storage areas. The postings were acceptable and indicated the radiation and contamination hazards present. Other postings also showed the industrial hygiene hazards present in the areas. The facility's radioactive material storage areas were noted to be properly posted. No unmarked radioactive material was found in the facility. Copies of current notices to workers required by 10 CFR Part 19 were posted at the entrances to the Control Room and to the Reactor Bay as well.

(3) Dosimetry

The licensee used a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor (Landauer) to process personnel dosimetry. An examination of the records for the past two years through the third quarter of 2001 showed that all exposures were well within NRC limits and within licensee action levels. Most of the

records showed personnel received exposures of only a few millirem above background. Through direct observation, the inspector determined that dosimetry was acceptably used by facility personnel.

(4) Radiation Monitoring Equipment

The calibration of portable survey meters was typically completed by personnel from the Campus Radiation Safety Group. Calibration of friskers, fixed radiation detectors, and air monitoring instruments was completed by the RHP. The calibration records of selected portable survey meters, friskers, fixed radiation detectors, and air monitoring equipment in use at the facility were reviewed. Calibration frequency met the requirements established in Health Physics Procedure HP 10 and records were being maintained as required.

(5) Radiation Protection Program

The licensee's Radiation Protection Program was established in the North Carolina State University (NCSU) Radiation Safety Manual, Revision 1, dated December 3, 1998, and in Health Physics Procedure HP 1. The program required that all personnel who had unescorted access to work in the Reactor Bay (a radiation area) would receive training in radiation protection, policies, procedures, requirements, and facilities prior to entry. The program was being reviewed annually, as noted earlier. The inspector also reviewed the training that was being conducted for licensee personnel in the area of radiation protection. The training covered the topics required to be taught in 10 CFR Part 19 and the results of an examination given following the class indicated that the staff understood what was presented.

The licensee's Respiratory Protection Program was being carried out as outlined by Health Physics Procedure HP 9. The inspector determined that training was being conducted and bioassays were being completed. It was also noted that annual personnel physicals were being conducted and the equipment was being checked and maintained as required and at the required frequencies.

The inspector reviewed the Radiation Work Permits (RWPs) that had been written and used during the past two years as stipulated in Health Physics Procedure HP 8. It was noted that the controls specified in the RWPs were acceptable and applicable for the work being done. The RWPs had been reviewed, approved, and eventually terminated as required.

(6) ALARA Policy

The ALARA Policy was also outlined and established in the Health Physics Procedure HP 1 and in the NCSU Radiation Safety Manual. The ALARA program provided guidance for keeping doses as low as reasonably achievable and was consistent with the guidance in 10 CFR Part 20.

(7) Facility Tours

The inspector toured the Control Room, Reactor Bay, and selected support laboratories and offices. Control of radioactive material and control of access to

radiation and high radiation areas were acceptable. As noted earlier, the postings and signs for these areas were appropriate.

c. Conclusions

The inspector determined that, because: 1) surveys were being completed and documented acceptably to permit evaluation of the radiation hazards that might exist; 2) postings met regulatory requirements; 3) personnel dosimetry was being worn as required and doses were well within the licensee's procedural action levels and the NRC's regulatory limits; and, 4) radiation monitoring equipment was being maintained and calibrated as required, the Radiation Protection Program being implemented by the licensee satisfied regulatory requirements.

5. Effluent and Environmental Monitoring

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with the requirements of 10 CFR Part 20 and TS Sections 4.4 and 6.7.4:

- PULSTAR Surveillance Procedure PS 6-02-3:A1, "VAMP Area Radiation Monitor Calibration," Rev 0, with an effective date of October 26, 1994
- PULSTAR Surveillance Procedure PS 6-17-1:A1, "Area Radiation Monitoring Channel Calibration," Rev 3, with an effective date of April 10, 2000
- PULSTAR Surveillance Procedure PS 6-17-2:A1, "Process Radiation Monitoring Channel Calibration," Rev 3, with an effective date of April 10, 2000
- PULSTAR Surveillance Procedure PS 6-17-3:W1, "Radiation Monitoring System Setpoint Verification," Rev 0, with an effective date of April 10, 2000
- PULSTAR Surveillance Procedure PS 6-16-1, "Assessment of Airborne Effluent," Rev 0, with an effective date of June 1, 1998
- PULSTAR Surveillance Procedure PS 6-16-2, "Sampling, Analysis, and Assessment of Liquid Effluent," Rev 0, with an effective date of June 1, 1998
- licensee Annual Reports for 1999 and 2000
- airborne release records documented in Attachment 1, Surveillance Procedure PS 6-16-1 for 2000 and to date in 2001
- liquid release records documented in Attachment 3, Surveillance Procedure PS 6-16-2 for 2000 and to date in 2001
- counting and analysis records associated with the airborne and liquid releases

b. Observation and Findings

The inspector reviewed the calibration records of the area and stack monitoring systems. These systems had been calibrated annually according to Surveillance Procedures PS 6-02-3:A1, PS 6-17-1:A1, and PS 6-17-2:A1. The weekly setpoint verification records for the radiation monitoring equipment were also reviewed. The setpoints had been verified and documented per Surveillance Procedure PS 6-02-3:A1. Corrective actions, including recalibration, were taken if the setpoint values were exceeded.

The inspector also reviewed the records documenting liquid and airborne releases to the environment. The inspector determined that gaseous releases continued to be calculated as required by Surveillance Procedure PS 6-16-1 and were adequately documented. The releases were determined to be well within the annual dose constraints of 10 CFR 20.1101 (d), 10 CFR Part 20 Appendix B concentrations, and TS limits. Liquid releases were approved by the RHP after analyses conducted per Surveillance Procedure PS 6-16-2 indicated that the releases would meet regulatory requirements for discharge into the sanitary sewer.

c. Conclusions

Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and TS limits.

6. Transportation

a. Inspection Scope (IP 86740)

The inspector reviewed the following to verify compliance with procedural requirements for transferring licensed material:

- PULSTAR Health Physics Procedure HP 6, "Receipt, Transfer, and Shipment of Radioactive Material and Disposal of Solid Radioactive Waste," Rev 0, with an effective date of June 1, 1998
- records of transfers of radioactive waste for 2000 and to date in 2001

The inspector also interviewed licensee personnel.

b. Observations and Findings

Through records reviews and the discussions with licensee personnel, the inspector determined that the licensee continued to transfer solid radioactive waste to the Campus Radiation Safety Group for shipment and/or disposal. The transfers were in compliance with procedure. No offsite shipments of radioactive material had been initiated by the licensee and none were anticipated until possibly 2005.

c. Conclusions

Radioactive material was transferred to the Campus Radiation Safety Division for shipment and/or disposal according to procedure.

7. Physical Security

a. Inspection Scope (IPs 81401, 81402, 81431)

To verify compliance with the licensee's NRC-approved Physical Security Plan (PSP) and to assure that changes, if any, to the plan had not reduced its overall effectiveness, the inspector reviewed:

- logs, records, and reports concerning security
- access and key controls
- intruder detection and physical barriers
- Security Procedure 1.0, "Unauthorized Intrusion In Controlled Access Area," Rev 5, dated February 12, 1996
- Security Procedure 2.0, "SNM Theft or Theft Threats and Acts of Civil Disturbance," Rev 5, dated February 12, 1996
- Security Procedure 3.0, "Bomb Threat In Burlington Engineering Laboratories," Rev 5, dated February 12, 1996

b. Observations and Findings

The inspector verified that the Physical Security Plan and implementing procedures were being reviewed biennially as required and were updated/revised as needed.

The licensee was maintaining appropriate control over access to the Controlled Access Area (CAA) and over keys used at the facility. Security devices and physical barriers were also being maintained and tested as required. Appropriate records were being maintained by the licensee as well.

c. Conclusions

The inspector determined that the licensee was complying with the requirements specified in the NRC regulations and in the licensee's PSP and implementing procedures.

8. Material Control and Accounting

a. Inspection Scope (IP 85102)

To verify compliance with 10 CFR Part 70, the inspector reviewed:

- control of storage areas
- PULSTAR Health Physics Procedure HP 7, "Leak Testing, Inventory, and Accountability of Special Nuclear Material (SNM) and Licensed Sealed Sources," Rev 1, with an effective date of April 18, 2001

- annual inventory results documented in Attachment 3, "SNM Inventory Record," Health Physics Procedure HP 7
- Nuclear Material Transaction Reports for the time period from October 1999 through September 2000

b. Observations and Findings

The records reviewed by the inspector showed that the licensee was maintaining control of SNM storage areas as required. Records also showed that physical inventories were conducted at least annually as required by 10 CFR 70.51(d). Nuclear Material Transaction Reports (DOE/NRC Form 741) and Material Status Reports (DOE/NRC Form 742) had been completed semiannually and submitted by the licensee to the appropriate regulatory agencies in a timely manner and as required by 10 CFR 74.13(1).

c. Conclusions

The licensee was acceptably controlling and tracking SNM as required by 10 CFR Part 70 and the licensee's Material Control and Accounting Program.

9. Follow-up on Previously Identified Issues

a. Inspection Scope

The inspector reviewed the actions taken by the licensee following identification of two violations during an inspection in February 2001, and documented in NRC Inspection Report 50-297/2001-201, dated March 9, 2001.

b. Observations and Findings

- (1) VIO 50-297/2001-201-01 - Failure to submit changes of the Emergency Plan to the NRC within 30 days of the effective date as required by 10 CFR 50.54(q).

10 CFR 50.54(q) states that, if a change is made (to the Emergency Plan) without approval, the licensee shall submit, as specified in 10 CFR 50.4, a report of each change within 30 days after the change is made.

During an inspection in February 2001 the inspector reviewed the licensee's Emergency Plan. The licensee had submitted Revision Number 6 to their Emergency Plan (Plan) to the NRC by a letter dated August 17, 2000. However, the licensee had placed the revised Plan into effect on June 1, 2000, because it had been concluded that the changes made in the revision did not decrease the effectiveness of the Plan and thus did not require the approval of the NRC. Although the NRC reviewed the changes and found they did not decrease the effectiveness of the Plan, the inspector confirmed that the revision had not been sent to the NRC within 30 days after the changes were made as required by the regulations. Failure to submit changes to their Plan to the NRC within 30 days of the effective date of the Plan was identified as a violation of 10 CFR 50.54(q).

The licensee responded to this violation in a letter dated April 5, 2001. The cause of the violation was noted as being management oversight. Corrective actions taken

were to report the changes to the NRC and, to avoid further problems, revise the procedure governing making changes. Special Procedure SP 2.1, "Review and Approval of Documentation" was revised to require that a report of each change to the Emergency Plan be submitted to the NRC within 30 days following the change. The inspector verified that these actions had been taken. This item is considered closed.

- (2) VIO 50-297/2001-201-02 - Failure to have revisions to the Emergency Procedures reviewed by the RSC or the RSAC as required by TS 6.2.3.

TS Section 6.2.3, dated April 30, 1997, requires that all new procedures and major revisions thereto having safety significance, including procedures implementing the Plan, be reviewed by the RSC or the RSAC as appropriate.

During the same inspection in February 2001, the inspector reviewed the Emergency Procedures. It was noted that, from April 30, 1997, through February 23, 2001, one of the licensee's procedures, Emergency Procedure 8, "Revisions," Revision 3, dated October 15, 1995, specified that changes to the Emergency Procedures were to be coordinated by the Reactor Health Physicist and reviewed by the facility Associate Director. There was no requirement that stipulated a review was to be conducted by the RSC or by the RSAC. Consequently, revisions were made to various Emergency Procedures without the required review by either safety committee before the procedures were implemented. Changes were made and implemented through revisions issued on December 15 and 17, 1997, on January 1, 1999, on June 1, 2000, and on January 12, 2001. Failure to have revisions to the Emergency Procedures reviewed by the RSC or the RSAC as required was identified as a violation of TS 6.2.3.

The licensee responded to this violation in the same letter dated April 5, 2001. The cause of the violation was noted as being management oversight. Corrective actions taken included having the RSC and RSAC review and approve all changes made to the Emergency Procedures since April 30, 1997. A total of seven procedures were reviewed. The reviews and approvals were documented in the meeting minutes for the RSC dated February 23, 2001, and in the meeting minutes of the RSAC dated March 22, 2001. The inspector verified that these actions had been taken. This item is considered closed.

c. Conclusions

The licensee took corrective actions following identification of two violations during an inspection in February 2001 and the items are considered closed.

10. Exit Interview

The inspection scope and results were summarized on December 13, 2001, with members of licensee management. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The PSP, and related subject matter, were identified as proprietary information.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

S. Bilyj, Reactor Operations Manager
K. Kincaid, Chief of Reactor Maintenance
P. Turinsky, Nuclear Engineering Department Head
G. Wicks, Reactor Health Physicist and Acting Nuclear Reactor Program Associate Director
B. Wehring, Interim Nuclear Reactor Program Director

Campus Environmental Health and Safety Center

A. Orders, Campus Radiation Safety Officer

Campus Public Safety Office

J. Dailey, Deputy Director, Public Safety
L. Ellis, Lieutenant, Public Safety

INSPECTION PROCEDURES USED

IP 69001 Class II Non-Power Reactors
IP 81401 Plans, Procedures, and Reviews
IP 81402 Reports of Safeguards Events
IP 81431 Fixed Site Physical Protection of Special Nuclear Material of Low Strategic Significance
IP 85102 Material Control and Accounting - Reactors
IP 86740 Inspection of Transportation Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-297/2001-201-01	VIO	Failure to submit changes of the Emergency Plan to the NRC within 30 days of the effective date as required by 10 CFR 50.54(q).
50-297/2001-201-02	VIO	Failure to have revisions to the Emergency Procedures reviewed by the RSC or the RSAC as required by TS 6.2.3.

LIST OF ACRONYMS USED

ALARA	As low as reasonably achievable
CAA	Controlled Access Area
CFR	Code of Federal Regulations
HP	Health physics
IP	Inspection Procedure
MW	Megawatt
NCSU	North Carolina State University
NRC	Nuclear Regulatory Commission
NRP	Nuclear Reactor Program
NVLAP	National Voluntary Laboratory Accreditation Program
PSP	Physical Security Plan
RHP	Reactor Health Physicist
RSC	Radiation Safety Committee
RSAC	Reactor Safety and Auditing Committee
RWP	Radiation Work Permit
SNM	Special Nuclear Material
TS	Technical Specification
VIO	Violation