



# North Carolina State University

Nuclear Reactor Program  
Department of Nuclear Engineering

Box 7909  
Raleigh, NC 27695-7909  
(919) 515-2321  
FAX (919) 515-5115

15 September 1995

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

**Subject: NCSU PULSTAR REACTOR EMERGENCY PLAN REVISION 3  
SUBMITTAL UNDER 10 CFR 50.54(q)  
Docket No.: 50-297  
License No.: R-120**

Dear Sir or Madam:

Pursuant to the provisions of 10CFR 50.54(q), North Carolina State University is hereby submitting the facility's revised Emergency Plan following the instructions in 10CFR50.4(b)(5). The changes in the Emergency Plan do not decrease the effectiveness of the Plan and Revision 3 of the Plan continues to meet the requirements of 10 CFR 50 Appendix E.

Revision 3 of the Plan reflects the revised 10CFR20 and incorporates the North Carolina State University Incident Command System (ICS). Additionally, Appendix B has been revised to facilitate off-site dose rate calculations. A summary of the substantive changes is attached.

If you have any questions concerning this reply, please contact me at (919) 515-4601 or Mr. Perez at (919) 515-4602.

Sincerely yours,

Pedro B. Perez  
Associate Director  
Nuclear Reactor Program

Gerald D. Wicks, CHP  
Reactor Health Physicist

Attachment: NCSU Emergency Plan, Revision 3

copy w/attachment: U.S.N.R.C., Region II, Regional Administrator (2 copies)  
Dr. James Knopp, Chairman, Radiation Protection Council  
Dr. Charles Mayo, Chairman, Reactor Safety and Audit Committee  
Dr. Merrick Harrison, Radiation Protection Officer

SUMMARY OF CHANGES FOR EMERGENCY PLAN REVISION 3

SECTION	DESCRIPTION OF CHANGES
1	<p>(1) Licensing and regulatory documents are referenced. Titles changes were made.</p> <p>(2) Minor wording changes were made to emphasize that only the NRP may implement this emergency plan.</p>
3	<p>(1) Descriptions of the Incident Command System (ICS) and PULSTAR Emergency Organization (PEO) are given including responsibilities and relationships.</p> <p>(2) Emergency position descriptions were modified to reflect ICS and PEO responsibilities. ICS responds to emergencies involving off-site hazards and non-radioactive hazards. PEO responds to emergencies involving on-site radiation hazards and reactor operations. Emergency Coordinator or Emergency Director report to the ICS to ensure actions are coordinated and communication is established with the PEO. Title changes were also made.</p> <p>(3) NCSU Environmental Health &amp; Safety Center functions were added.</p> <p>(4) Department of Energy was deleted from the Off-Campus Support listings.</p>
5	<p>(1) Emergency Action Level (EAL) basis was referenced.</p> <p>(2) Ventilation modes and atmospheric dilution are briefly described.</p> <p>(3) Notification of Unusual Event (NUE) and Alert classification airborne effluent concentration limits in the Confinement mode with BEL dilution were increased by 25%. The previous values were incorrectly based on the difference between normal and confinement ventilation modes. The new values are correctly based on dilution which occurs outside of the Reactor Bay by the R-3 (expired R-63 license) fans.</p> <p>(4) NUE classification based on fire was changed to specify safety significant equipment with no time constraints.</p> <p>(5) Criteria for NUE and Alert classification based on fuel damage were added and are compared to FSAR values. No quantitative limits were given previously.</p>
7	<p>(1) ICS description and functions were added along with a description of the relationship between the ICS and PEO. Title changes were made.</p> <p>(2) Notification process was changed to clarify the expected sequence or initiating cues.</p> <p>(3) Evacuation criteria were changed to allow staffing of the Control Room as long as habitability requirements are met. Previously the Control Room could have been prematurely evacuated, thereby resulting in a non-conservative action. This change ensures reactor parameters can be monitored safely throughout the emergency.</p> <p>(4) Personnel dose limits were changed to those given in ANSI/ANS 15.11-1993.</p>
8	<p>(1) ICS equipment and facility information were added. PEO equipment and facility information were updated.</p> <p>(2) Minor wording changes were made for clarification.</p>
9	<p>(1) NCSU support groups are listed as such in the recovery organization.</p> <p>(2) Title changes were made.</p>
2, 4, 6, 10	No significant changes. Minor wording changes were made for clarification.
Tables	<p>(1) Quantities were deleted for emergency equipment. Necessary quantities of equipment will be included in the Emergency Procedure on equipment inventory.</p> <p>(2) Table 6 was formerly Figure 6.</p>
Figures	<p>(1) Maps were updated in Figures 1 and 2.</p> <p>(2) NRP organizational chart was updated.</p> <p>(3) PEO and ICS organizational chart is given.</p>
Appendices	<p>(1) Appendix A "Letters of Agreement" with off-site organizations are included from the city, county, and state. Letters from Rex Hospital and the 911 Emergency Communication Center have been requested but not yet received. A 1994 letter from Rex Hospital is included.</p> <p>(2) Appendix B was expanded to describe in detail how release rate, concentration, and off-site dose projections can be made for airborne effluent.</p> <p>(3) Procedure for "Emergency Locker Inventory" was added to Appendix C.</p>