

**CINTICHEM, INC.**

a wholly owned subsidiary of

**Medi-Physics, Inc.** P.O. BOX 816, TUXEDO, NEW YORK 10987 [914] 351-2131

March 30, 1988

U. S. Nuclear Regulatory Commission  
Region I  
Division of Radiation Safety and Safeguards  
475 Allendale Road  
King of Prussia, PA 19406

Attention: Mr. Thomas T. Martin, Director

Dear Mr. Martin:

RE: (a) NRC Inspection 70-687/87-04  
(b) Cintichem Letter JJMcG/bjc 12/21/87

Reference (a) summarized observations and recommendations of the NRC that were made following the Operational Safety Review of operations at Cintichem during May 1987. Reference (b) was Cintichem's immediate response to the inspection report with a commitment to respond to all recommendations by March 31, 1988. This letter fulfills that commitment.

Our responses are listed in the same order as they appear in the NRC report (Reference a).

RECOMMENDATION 3.a.1.b

Assure the gasoline-fired emergency generator located in the facility electrical switchgear room is isolated from the electrical switchgear by a seismically qualified two hour fire rated wall and that this enclosure is equipped with adequate fire detection and suppression systems.

RESPONSE

The NRC recommends installing a fire wall between the generator and the adjacent electrical switchgear. This option was explored, but because of the expense of a fire rated wall and the age of the gasoline fired generator, we have chosen to purchase a new diesel fueled generator. This generator has been delivered and will be installed in our canal area away from the switchgear room. Therefore, the NRC's two major concerns have been addressed. The gasoline fueled generator will be replaced with a diesel fueled generator, and it will be located away from the electrical switchgear.

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This solution offers the following advantages:

1. Replacement of original equipment.
2. Segregation of the generator from the motor control center.
3. Higher flashpoint of diesel fuel.

RECOMMENDATION 3.a.1.b

Establish an administrative control program with respect to the handling, storage, and/or dispensing of flammable and combustible liquids; control of solid combustible materials (housekeeping); and control of the welding and cutting program at the site.

RESPONSE:

Cintichem has developed a program to administratively control the handling, storage, dispensing, and disposal of flammable and combustible liquids. Policies and procedures regarding this program is contained in our Radiation/General Safety Manual. Specific waste disposal procedures have recently been developed to help comply with State of New York Department of Environmental Conservation regulations.

In addition to our internal inspections and departmental meetings, Cintichem has implemented a campaign to help continue our improvement in the general housekeeping and control of combustible materials at our site. We feel that an initial improvement in housekeeping has occurred and that on-going diligence by all employees is necessary in this area.

As part of our improved surveillance of our industrial safety programs at Cintichem, we have developed a program with written procedures to reduce the fire hazards associated with welding and cutting operations at our site.

RECOMMENDATION 3.a.1.b

Establish a fire detection, suppression and control system maintenance testing and inspection program.

RESPONSE:

Cintichem has developed and implemented such a program which includes:

1. Monthly fire prevention inspections,
2. Monthly test/inspection of sprinkler alarms, valves, hydrants, fire extinguishers, etc.,
3. Semi-annual fire hydrant maintenance,
4. Annual flow and drainage tests on hydrants,
5. and Annual hydrostatic test of fire hoses.

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In addition, a computer surveillance system has been purchased and will be installed by the Fall of 1988 to enhance our fire detection program.

RECOMMENDATION 3.a.1.b

Establish and train a fire emergency brigade in accordance with written fire emergency plans.

RESPONSE:

Cintichem has developed and implemented a fire emergency program at the site which is handled through our Plant Emergency Organization (PEO). The PEO is described in our Radiation/General Safety Manual and is responsible for building evacuations, sprinkler control, fire extinguishment, salvage, and hazardous materials. The captain of the fire extinguishment and hazardous materials groups has had training in Industrial Fire Safety, Essentials of Firemanship, Fundamentals of Industrial Fire Protection Equipment, and is a certified New York State E.M.T. We have an agreement with the Tuxedo Fire Department on fire response for our site and we conduct tours and drills with this fire department.

In addition, we routinely consult with Mr. Donald Blackman, Safety and Fire Protection Engineer, of Hoffmann-La Roche, Nutley, New Jersey regarding fire protection/prevention issues at Cintichem.

RECOMMENDATION 3.a.1.b

Assure that fire protection equipment installed in Buildings 1 and 2 are adequate to assure the rapid detection and suppression of fires.

RESPONSE

The Reactor Building (Building 1) is manned 24 hours a day, seven days a week. The Hot Laboratory (Building 2) is manned 24 hours a day for 5 of 7 days in a week, and during the weekends a security/fire tour is made of both Buildings 1 and 2 every 2 hours. This provides the capability for detection and immediate suppression of a fire in most areas of these buildings.

Building 1 has portable fire extinguishers, an area sprinkler protection system, and a water stand pipe and fire hose station. Building 2 has portable fire extinguishers, area sprinkler protection systems, a main filter bank CO<sub>2</sub> fire suppression system, and portable fire extinguishers. This equipment should be adequate to suppress potential fires. Of note here is that Buildings 1 and 2 are basically built of concrete and steel and little combustible material is stored in the buildings. Where combustibles are stored, automatic sprinklers are in service.

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Cintichem is also presently investigating the extra fire suppression measures of adding a manual water suppression system to the hot cell charcoal filter bank. A CO<sub>2</sub> fire suppression system is being designed and will be installed in each hot cell.

A fire department pumper connection has been added to the sprinkler standpipes in Buildings 2 and 3, (all buildings are so equipped at this time).

A security system has been purchased to enhance site wide security control and monitoring. This system is capable of monitoring for smoke and heat as well as intrusion by unauthorized persons. When this system is made operational the addition of fire detection monitors will be provided in those areas where fire is likely to be sustained without early detection.

RECOMMENDATION 3.a.1.b

Establish and implement a preventive and corrective maintenance program for all applicable equipment handled at the site.

RESPONSE

A personal computer and Associated Maintenance PAC software have been purchased as part of an overall PM/CM program upgrade. PM and CM activities for all major equipment will be scheduled and recorded in this new system. Procedures will be written for the maintenance of all relevant safety related equipment.

RECOMMENDATION 3.a.2.b

Establish a formal Industrial Safety Program for Tuxedo site that contains all of the required elements.

RESPONSE:

Cintichem has assigned a full time Industrial Safety Specialist to coordinate the industrial safety activities to assure compliance with regulatory requirements. This individual reports directly to the Manager of Health, Safety, and Environmental Affairs. A formal industrial safety program has been initiated at Cintichem and is continuing to develop throughout our site.

RECOMMENDATION 3.a.2.b

Provide a centralized storage location for hazardous chemicals or waste containing hazardous chemicals and assure that incompatible chemicals and gases are not being co-mingled in storage.

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RESPONSE:

Cintichem has provided a centralized storage area for hazardous chemicals and wastes. We are also finalizing our plans for a new hazardous waste storage area to comply with State of New York Department of Environmental Conservation requirements which require that incompatible chemicals and gases are prevented from being commingled during storage prior to disposal.

RECOMMENDATION 3.a.2.b

Securely anchor machine shop machines (lathes, etc.) to the floor and assure that all slings used to lift equipment are properly labeled.

RESPONSE

Small machine shop machines such as drill presses, grinders, and sheet metal brakes, will be securely anchored to the floor. Large, stable equipment such as metal working lathes and milling machines which can not move or tip over will not be anchored to the floor since there is no safety value gained and machine accuracy would suffer.

All slings used for lifting on the site, whether purchased or constructed in-house, will be properly labeled with rated capacity.

RECOMMENDATION 3.a.2.b

Re-evaluate the hand and foot counter calibration procedure to assure that the instruments are properly calibrated; reduce the background radiation in the vicinity of the hand and foot counter located at the facility exits; and, assure that the exhaust stack radioactive material measuring devices are accurately recording releases from the facility.

RESPONSE:

Health Physics has re-evaluated the calibration procedures for our hand and foot monitors (HFM) and are developing improved calibration procedures. Our work area radiation background levels are being investigated in an attempt to reduce and/or shield the background levels to help assure appropriate monitoring of personnel. A new HFM is planned for purchase by mid year of 1988 which will improve our monitoring program.

We are reviewing our effluent monitoring program with plans to upgrade our measuring equipment where appropriate. In addition, we are investigating the use of an on-line effluent monitor recently proposed to Cintichem by Pennsylvania State University to help determine the processing points which are major contributors to the site airborne effluent.

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RECOMMENDATION 3.a.3.b

Develop and implement a program to assure that significant quantities of combustible trash and other materials are not allowed to accumulate throughout the facility.

RESPONSE

A site wide survey has been completed to identify inappropriate storage areas and possibilities to consolidate raw material or equipment storage and also segregate incompatible storage. Following this survey, the following actions either have been accomplished or will be accomplished during the first half of 1988.

- Surplus equipment has been identified and removed from operating areas. Storage has been provided in appropriate storage areas.
- Raw materials and supplies that have been stored in Building 2 will be moved to the Building 3 Warehouse area. The Building 3 Warehouse space has been increased by 1/3 to accommodate storage of items being moved out of operating areas.
- A general cleanup of all areas on site has been initiated and obsolete equipment will be discarded.
- General awareness of housekeeping has been raised as a routine consideration for performance evaluation within all functioning groups on site. This will be a continuing effort at all levels of the site organization.

RECOMMENDATION 3.a.4.b

Establish a program to assure that review and audits in the following areas are conducted by persons not associated with the operations (i.e.: knowledgeable, but independent):

- ° health physics program
- ° industrial safety program
- ° fire safety program
- ° Radiological Contingency Plan.

RESPONSE:

A Safety Audit Team (SAT) is currently in place to provide a mechanism for corporate evaluation and review of Cintichem's radiation safety, industrial safety and fire safety programs. The Safety Audit Team (SAT) is comprised of appropriate personnel including Medi-Physics, Inc. facility Radiation Safety Officers and MPI Professional Service Centers, Inc., Health Physicists, who are knowledgeable, but independent. The chairperson of the Corporate Safety Review Committee (CSRC) shall designate team members for each facility inspection. At

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least one inspection shall be performed each calendar year. Corrective actions regarding items of non-compliance experienced during previous SAT or Regulatory Agency inspections will be reviewed.

Our Radiological Contingency Plan will be reviewed as recommended through the Corporate Safety Review Committee. The Corporate Safety Review Committee (CSRC) shall be comprised of the following personnel:

V. P. Operations

Director QC/QA and DRA (Chairperson)  
Legal Counsel  
HLR Site Radiation Safety Officer  
Medi-Physics Inc., (MPI) Site Managers  
MPI Professional Service Centers, Inc. (MPI PSC) Pharmacy Managers  
MPI Facility Radiation Safety Officers  
MPI PSC Health Physicists  
Cintichem Site Radiation Safety Officer  
Cintichem Plant Manager  
Cintichem Staff Health Physicist

The Committee will perform document reviews to assure that facility manuals, procedures, licenses reflect current activities at the facility.

The chairperson of the CSRC will coordinate Safety Audit Team inspections, and review the results of the inspection and the facility response.

The chairperson of the CSRCS will review all State and Federal inspection reports dealing with general safety or radiation safety, and the corrective actions proposed to the enforcement agency.

RECOMMENDATION 3.a.4.b

Assure that the Nuclear Criticality Safety Consultant attends a sufficient number of Safeguards Committee meetings each year so that he can maintain cognizance of activities at the site which might affect nuclear criticality safety.

RESPONSE

The Nuclear Criticality Safety Consultant receives minutes of the proceedings of all Nuclear Safeguards Committee meetings. He will be present at any meeting where criticality safety items are reviewed. The membership of the Committee has been increased to include an additional member with Nuclear Engineering (Master's Degree) knowledge and several years of reactor operating experience. All other members remain the same.

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RECOMMENDATION 3.a.4.b

Assure that safety audits and inspections are conducted in accordance with documented plans and checklists and that a tracking system has been established to assure that all audit and inspection findings have been corrected.

RESPONSE

All safety audits are reviewed by one of three committees; Nuclear Safeguards, Radiation Safety, or Industrial Safety. Each committee is chartered to review specific audits and track corrective actions. Each Secretary or Chairperson maintains an evergreen open item list that is reviewed at meetings for status changes. Closed out items are noted in the committee minutes which become the record of this activity.

Plans and checklists exist for some of the safety related inspections. In the future, each cognizant committee will develop appropriate documentation for all safety related inspections.

RECOMMENDATION 3.a.6.b

With regard to the employee training programs:

- o Formalize the hot laboratory operator training program.
- o Assure that operating procedures are reviewed by new employees during initial training.
- o Assure that training records include satisfactory completion dates for initial and requalification training.
- o Establish a mechanism to assure that employees are aware of areas for which additional training is required.

RESPONSE

A formal training and requalification program is to be established for all radiochemical production personnel. The program will be similar to the FNMC qualification program. An outline of this program is as follows and full implementation is scheduled to be accomplished by December 31, 1988.



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#### HOT LAB TRAINING PROGRAM DESCRIPTION

The Hot Lab Training Program at the Cintichem facility shall consist of the following:

1. A listing of critical functions in each production area written by management and initialed by the employee(s) involved. A copy is to be filed.
2. An annual review of appropriate Operating and Production procedures. Copies of initialed sections are to be filed.
3. An initial certification by management that each new employee is capable to perform each critical function within his/her work area.
4. An annual review of employee's techniques and procedures by his/her immediate supervisor. Copies of the review to be filed. (List of functions developed under Item #1 is to be used as a guide).

#### HOT LAB TRAINING PROGRAM IMPLEMENTATION

1. Initial certification of new authorized individuals will be completed within 90 days after employment begins.
2. Regualification of all people will be accomplished annually and should be completed during the first quarter of each year.
3. The Hot Cell Production Supervisor and the Production and Inventory Control Supervisor shall be responsible for maintaining the listing of critical functions in their respective production areas.
4. A record of each certification shall be filed.

#### RECOMMENDATION 3.a.7.b

Review and revise the Radiological Contingency Plan to:

- o Provide a format consistent with the guidance contained in 10 CFR 50, Appendix E or NUREG-0762.

#### RESPONSE

Cintichem has reviewed the above referenced Part 50, Appendix E and notes that Appendix E in Section I states:

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"The potential radiological hazards to the public, associated with the operation of research and test reactors and fuel facilities licensed under 10 CFR Parts 50 and 70, involve considerations different than those associated with nuclear power reactors. Consequently, the size of Emergency Planning Zones (EPZs) for facilities other than power reactors and the degree to which compliance with the requirements of this Section and Sections II, III, IV, and V as necessary will be determined on a case-by-case basis. Regulatory Guide 2.6 will be used as guidance for the acceptability of research and test reactor emergency response plans."

In September 1982, Cintichem submitted to the NRC's NRR and NMSS Divisions a consolidated Emergency Plan which met the emergency plan requirements of both Part 50 and Part 70. Specifically, our plan was written to meet the Part 50 requirements of ANSI/ANS 15.16, Regulatory Guide 2.6, and NUREG 0849; and the Part 70 requirements of NUREG 0762 and NUREG 0810. NUREG 0849 and 0810 are "Standard Review Plans" written by the NRC to "provide definitive acceptance criteria to insure uniform reviews are made by different reviewers." Both NMSS and NRR, using these guides, approved our Emergency Plan. Specifically, NMSS has stated in Chapter 8, of our SNM639 License, that our approved "Emergency Plan incorporates the requirements of 10CFR70.22(1)" and NRR has stated in their 1984 Safety Evaluation Report that our plan "demonstrates that Cintichem has the capabilities to assess and respond to emergency events and that the plan provides assurance that the necessary emergency equipment is available."

Cintichem worked with the NRC's Division of Emergency Preparedness Development Branch in developing our plan. In mid-1982, the NRC gave all U.S. Research Reactors a guide, entitled "Plan Preparation of Research Reactor Emergency Plans". This guide, written to simplify the development of an Emergency Plan, was written to correspond to ANSI/ANS 15.16 and Regulatory Guide 2.6, and gave suggestions on format. Our plan directly follows this format.

In July of 1984, an Emergency Preparedness Implementing Appraisal Team, consisting of three individuals spent several days on our site reviewing our plan. These inspectors concluded that "the Emergency Preparedness Program is capable of providing reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency". The inspectors identified several improvement items for consideration by the licensee which were addressed in Cintichem's October 1, 1984 response to the NRC. No mention of a required overall re-formatting of our plan was brought up.

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We believe that our Plan's format does meet the requirements of the regulations, especially in regard with the "case by case basis" given to research reactors in 10 CFR 50 Appendix E. We have followed the formatting suggested in the guides, especially in the "Plan Preparation" guide that was provided by the NRC when the plan was written in 1982. We have also reviewed several other research reactor plans, in our development of our plan, and find these plans to generally conform to the same formatting. Overall, we feel our Plan format to be satisfactory and note that past NRC inspections have also found it so.

- o Provide a mechanism for level 1 or 2 managers to take over as the Emergency Director upon arrival at the site.

Our plan clearly designates who the Emergency Director will be. In Section 3, "Organization and Responsibilities", the Plan states that "The Emergency Director will be the senior person present from the following list:" It then lists nine job titles in descending order of job responsibility from the Plant Manager to the Reactor Operator. The first two job titles on the list are the Level 1 and then the Level 2 jobs, specifically the Plant Manager then the Manager of Nuclear Operations. Therefore, a mechanism does exist for Level 1 and 2 managers to take over as the Emergency Director upon their arrival at the emergency scene. Section 3 also lists nine specific responsibilities of the Emergency Director, five of which cannot be delegated. Our Plan therefore covers the issue of non-official Emergency Directors taking over control of emergency actions.

- o Identify the status of all current offsite support groups.

The status of offsite support groups is as follows:

<u>AGENCY</u>	<u>WRITTEN AGREEMENT</u>	<u>SITE TOUR</u>
Tuxedo Hospital	Discontinued as a support group agency	
St. Anthony's Hospital	01/11/88	N/A
Tuxedo Fire District	12/15/87	Yes 11/16/87
N. Y. Power Authority	01/15/88	N/A
Good Samaritan Hospital	02/05/88	N/A
Tuxedo Ambulance	01/21/88	N/A
Greenwood Lake Ambulance	04/27/88(planned)	04/27/88(planned)
N. Y. State Police*	12/15/87	04/27/88 (will invite)
Tuxedo Police*	12/15/87	04/27/88 (will invite)

\* It is unlikely that written agreements are necessary to have with police agencies.

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The updated status of these support groups will be included in our Emergency Plan.

- o Discuss the use or non-use of the General Emergency class of actions at the site.

To discuss this item it is best to extract parts of 10 CFR 50 Appendix E, NUREG-0849, and our Emergency Plan. The source and the quotation are listed below.

10 CFR 50 Appendix E, Section I

"The potential radiological hazards to the public, associated with the operation of research and test reactors and fuel facilities licensed under 10 CFR Parts 50 and 70, involve considerations different than those associated with nuclear power reactors. Consequently, the size of Emergency Planning Zones (EPZs) for facilities other than power reactors and the degree to which compliance with the requirements of this Section and Sections II, III, IV, and V as necessary will be determined on a case-by-case basis. Regulatory Guide 2.6 will be used as guidance for the acceptability of research and test reactor emergency response plans."

NUREG-0849 Standard Review Plan for the Review and Evaluation of Emergency Plans for Research and Test Reactors

"Four standard emergency classes are defined in ANSI/ANS 15.16 and in this document which are generally consistent with those used for power reactors. The classes are Notification of Unusual Events, Alert, Site Area Emergency and General Emergency.

The General Emergency class of accidents as defined in the NRC Regulations and in Appendix 1 to NUREG-0654/FEMA REP-1 is not credible for most research or test reactors as this class is reserved for accidents which could have a significant radiological impact at substantial distances from the reactor. Therefore, most research or test reactors would not include this class as part of their emergency plan.

Acceptable sizes for Emergency Planning Zones (EPZs) are given in Appendix II as a function of authorized steady state thermal power level. These are consistent with those given in Table II of ANSI/ANS-15.16. Small reactors do not require EPZs larger than the operations boundary because of the low potential hazard from these facilities."

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APPENDIX II

METHOD FOR DETERMINING THE SIZE OF AN EPZ

<u>Authorized Power Level</u>	<u>Acceptable EPZ Size</u>
Greater than 2 MW but less than or equal to 10 MW	100 Meters

CINTICHEM EMERGENCY PLAN Section 2 Definitions

"Emergency Planning Zone (EPZ) - Area for which emergency planning is performed to assure that prompt and effective actions can be taken to protect personnel in the event of an accident."

CINTICHEM EMERGENCY PLAN Section 6 - Emergency Planning Zones

"The [Cintichem] site boundary is established as the [Cintichem] Emergency Planning Zone. The minimum distance between the reactor building and the site boundary is 420 feet. This EPZ falls within the guidance of ANS 15.16 Table II. The size of this EPZ has been established such that in the worst case situation the dose received by individuals beyond this EPZ is not projected to exceed 1 rem whole body or 5 rem thyroid. The size of the site is large enough to provide a response base that would support activities outside this area should this ever be needed."

CINTICHEM EMERGENCY PLAN Section 4 - Emergency Classifications

"General Emergency - A general emergency involving an accident which results in uncontrolled releases of radioactive material into the air, water, or ground, and which would require offsite protective actions, is not credible for the [Cintichem] research reactor or hot laboratory. Because of the design, manufacture, operation, maintenance, and size of the [Cintichem] research reactor and the distance between the reactor and hot laboratory facility and the site boundary, offsite protective actions for the public are not required and have not been formulated."

A summary of these references is that 10 CFR 50 Appendix E acknowledges that the size of EPZs for research reactors should be determined on a case by case basis and states that Regulatory Guide 2.6 should be used as guidance in determining EPZs. Regulatory Guide 2.6 endorses ANSI/ANS 15.16 which in its Table II relates acceptable EPZ sizes. The

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Cintichem Emergency Plan utilizes 15.16 guidance in defining our EPZ as shown in the Plan's Definition Section and in Section 6. Our plan then describes in Section 4 why Cintichem has not planned for a General Emergency. We feel we are in full compliance with the NRC regulations and guidance on this issue and that our Plan fully explains the reasons why Cintichem has not identified a General Emergency Class. Cintichem worked closely with the Division of Emergency Preparedness Development Branch in developing our plan and in addressing this General Emergency issue. We do not understand the NRC's observation or recommendation on this subject as we feel our Plan covers this issue adequately.

- o Assure formal or controlled distribution of the RCP.

This observation is not accurate. Cintichem has a manual titled the "Supplemental Information Book". This book was compiled as a location for various technical documents including the Emergency Plan. The book has six official copies, distributed throughout the plant, and has a table of content and list of effective page section, which controls revision updates. It has been in existence since 1983. The Emergency Implementation Procedures are filed in our Procedures Manual Book.

- o Provide for audit of RCP implementation by independent personnel.

The approved plan does not prescribe an audit of the implementation of the plan. We perform annual drills and critiques. We don't believe that an independent audit is necessary.

- o Assure that emergency call lists and telephone rosters are maintained current.

Implementing procedures which contain current emergency call lists are revised continuously.

- o Assure that written agreements have been executed with, and are understood by, all required off-site support groups.

Cintichem has renewed all of our agreements with our off-site support groups. In addition, we are meeting with each group at our site during 1988 to assure that our written agreements are understood by our off-site groups and by Cintichem personnel. Refer to details on status of support groups in the previous response on this subject.

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- o Provide copies of RCP to required offsite support groups.

A General Emergency Class event is not anticipated at Cintichem. It is not necessary to provide offsite support organizations with copies of our plan. Our EPZ is limited to our site boundary.

- o Provide for the establishment of a formal emergency planning training program and
- o Establish qualification criteria for emergency response personnel.

#### RESPONSE

The Cintichem Emergency Plan lists key personnel who will direct emergency response actions. One of the key persons is the Emergency Director. The Emergency Director is the senior person at the scene from a list of nine job titles. These titles in descending order of responsibility are the Plant Manager, Manager of Nuclear Operations, Reactor Supervisor, Hot Lab Operations Supervisor, Nuclear Project Engineer, Chief Reactor Operator, Senior Reactor Operator, Lead Reactor Operator, or Reactor Operator. This list allows seventeen site people to function as the Emergency Director. Fifteen people from the list hold current NRC Reactor Operators licenses, one person from the list held a NRC license for twenty years, and the last person from the list will take the NRC Operators exam in August. Also, the three most senior job titles for the Emergency Director, (Plant Manager, Manager of Nuclear Operations, and Reactor Supervisor) have job qualification requirements as listed in the SNM-639 License - Section I-2.5 "Personnel Education and Experience Requirements". These three job titles require a B.S. in Engineering or Science, and 5 to 10 years of experience. The persons filling these positions have the required education and experience.

The Emergency Plan also lists other persons of Plan responsibility by job title. The Radiological Assessment Team is headed by the Manager of Health, Safety, and Environmental Affairs. This Manager is also the Emergency Planning Coordinator. The Emergency Public Information Officer is the Manager of Nuclear Operations and/or the Manager of Radiochemical Production. These positions again have minimum qualifications as listed in License SNM-639 Section I-2.5. The required education and experience levels are met by the persons filling these positions.

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Cintichem therefore feels that because of our inter-linking licenses (SNM-639, individual Reactor Operator, and Reactor R-81 Licenses) that our personnel are and will remain fully qualified to fill the responsibilities designated to them via the Emergency Plan.

- o Provide for the establishment of a formal Emergency Planning Training Program.

### RESPONSE

The Manager of Health, Safety, and Environmental Affairs is designated the Emergency Planning Coordinator and is responsible for emergency preparedness training. Cintichem gives training to the Emergency Director, Radiological Assessment Team, Public Information Officer, and the Site First Aid Squad. Cintichem also offers training and site orientation tours to local ambulance and hospital support teams.

Site training is coordinated through the use of two procedures. Procedure EP-16, "Training for Emergency Plan Personnel", lists training requirements and completion signoff blocks for the Emergency Director, Radiological Assessment Team, First Aid Squad, and Public Information Officer. Procedure EP-15, "Guide for the PIO" gives extra guidance to the Public Information Officer. These procedures require study of the Emergency Plan and its implementation procedures, and training on various topics including instrumentation, meteorology, and classification.

The Emergency Director, as a licensed Reactor Operator, also has training in the Emergency Plan via the Operator Requalification Program. The Plan's Emergency Implementation Procedures are reviewed annually by all operators and this review is documented. Also the comprehensive Biennial Operator written exams must, pursuant to the Operator Requalification Program, include material derived from this review material.

Training and site orientation tours have been offered to local ambulance, fire, and hospital support personnel. This has been done on an ongoing basis. Over the last six months, the Tuxedo Fire and Tuxedo Ambulance Squads have separately been to our site for training and site orientation. The Good Samaritan Hospital Regional Medical Center, which is designated as our Regional Radiation and Hazardous Material Decontamination Center, was also involved in our annual emergency drill conducted in December. Also, members of our First Aid Squad went to the Good Samaritan Hospital in October to attend a radiological training seminar on radiological emergencies.

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- o Assure emergency drills and tests, conducted at the facility, test all aspects of the emergency plan and include participation by offsite agencies.

The Cintichem Emergency Plan in Section 10, "Maintaining Emergency Preparedness" lists the requirements for emergency drills. These requirements are listed in full below.

#### Emergency Drills

"Emergency drills are developed and conducted to evaluate the response capabilities of the emergency organization, to test the adequacy of the implementation procedures and emergency test equipment, and to provide ongoing training for the emergency organization.

The Emergency Planning Coordinator is responsible for developing the written accident scenario and for the coordination and performance of the drill.

Onsite emergency drills will be conducted annually as action drills with each required emergency measure being executed as realistically as is reasonably possible, including the use of appropriate emergency equipment. The time interval between annual drills is not to exceed 14 months. Radiological monitoring including contamination control methods and procedures, dose rate measurements and assessments, non-essential personnel evacuation, and recordkeeping shall be performed. At least every two years, these drills shall contain provisions for coordination with local ambulance and hospital organizations and should test, as a minimum, the communication links between the [Cintichem] site and these offsite organizations. This biennial drill will include a simulated injured and contaminated individual. Offsite ambulance and medical treatment organizations will be invited to participate."

Cintichem in the past and presently follows these requirements. Our most recent emergency drill was conducted on December 11, 1987. In planning for this drill, a detailed written scenario was written and drill event parameter cards were prepared. The drill was started and personnel were evacuated from Buildings 1 and 2. The Emergency Director and the Emergency Support Personnel assembled and the event was classified. Members of the Radiological Assessment Team entered the building, equipped with radiation dose meters and breathing apparatus, and appraised the situation. Records were made of the contamination and dose rate levels found. A simulated injured man was attended to by both the First Aid Squad and Health Physics personnel. Our local agreement hospital was contacted about the injured person and the NRC Region I compliance number was called, using the Emergency Plan Implementation Procedure's telephone rooster. A drill critique was held followed by a seven page written drill and critique report.

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Cintichem feels that this recent drill substantiates our belief that we are meeting the requirements of the plan's drill requirements. Our drills over the years have had differing scenarios and have tested the important segments of our emergency plan and the emergency support teams.

RECOMMENDATION 3.a.7.b

Provide the proper equipment and facilities for the emergency control centers identified to handle each type of emergency.

RESPONSE

To discuss this NRC recommendation, we want to refer to the following NRC reports/guides or NRC approved ANS guides.

- NRC Operation Safety Review Audit (70-687/87-04) states that:

"The [NRC] inspectors toured the facilities to examine those areas that will be used for emergency response purposes. During the tours of these areas, the inspectors examined emergency kits and lockers, communications equipment, criticality monitoring equipment, radiological survey instruments, and first aid supplies. The facilities and equipment are as described in the RCP and appear adequate for response to criticality and other potential nuclear related incidents at the Tuxedo site."

- NRC 1984 Cintichem Safety Evaluation Report states that:

"[The Cintichem] plan demonstrates that Cintichem has the capabilities to assess and respond to emergency events and the plan provides assurance that the necessary emergency equipment is available".

- ANS 15.16 Standard for Emergency Planning for Research Reactors states that:

Section 3.81 "The [emergency] support center should be separated from actual activities to function efficiently."

- NUREG-0849 - Standard Review Plan for the Review and Evaluation of Emergency Plans for Research and Test Reactors states that:

Section 8.0 - Emergency Facilities and Equipment - "First aid and decontamination supplies [should be] in or near the ESC."

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Cintichem, in reading this NRC observation and the followup details on pages 32 and 33 of the NRC Report, find the NRC has questions on our reasons for choosing two Emergency Control Centers and to their locations and supporting equipment and materials. We chose the Building 2 area just outside the Building 1 airlock as the primary ECC as this is most appropriate area to respond to most reactor or hot lab incidents. If both Building 1 and 2 must be evacuated, including the primary ECC area, then we have planned for and named a secondary ECC in the lobby of Building 4. Both ECC's are equipped, as per the plan, with telephones. In developing our plan, we also considered many potential locations for our one "official" area to store emergency equipment. We chose the northwest corner of Building 4 as the best area for this as it was between the primary and secondary ECC's and it was near the Building 1 tunnel and Building 2 lobby entrances. We decided not to store this equipment in Buildings 1 or 2, because in the event that an incident called for evacuation of Buildings 1 and 2, this equipment would be inaccessible. We note that the NRC guidance referenced above does not require the emergency equipment to be at an ECC. It states equipment should be "near" an ECC and that "the ECC should be separated from the actual [recovery] activities." Also the Emergency Implementation Procedures are disseminated to 13 official copy holders. Four of these copies go to Building 4 Managers and seven to Managers/Supervisors and Reactor Operators in Buildings 1 and 2. Our system has people, not locations, receiving, updating, and keeping the procedures current and because of the large number of official copies near the ECC's, the ECC's do not need procedures until an event happens. When the ECC is manned, these procedures can be quickly brought to the ECC.

Overall, we do not agree with the NRC's observation that the ECC's may not be properly equipped. As quoted above, the NRC agrees that the proper equipment is available only questions its placement. We feel we have used the above NRC guidance and good engineering judgment in placement of our ECC's and our emergency equipment, and do not feel that this placement needs to be altered.

RECOMMENDATION 3.a.7.b

- o Assure that all emergency equipment is properly stored and calibrated.

RESPONSE:

Cintichem has reviewed all emergency equipment for proper storage and appropriate calibration. Plans are being finalized to assure that this equipment is periodically inspected and calibrated for any potential emergency which would require its use.


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We have responded to most of the recommendations of the NRC audit team by initiating and/or completing corrective measures which we trust will be satisfactory. We have provided reasons for not complying with a few recommendations that we believe could have been eliminated from the report if more time were available for discussion at the end of the inspection.

We would like to discuss any of our responses further if any questions remain.

Sincerely,

  
J. J. McGovern  
Plant Manager

JJMcG/bjc