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RECIP.NAME RECIPIENT AFFILIATION
CRUTCHFIELD,D. Operating Reactors Branch 5

SUBJECT: Forwards clarification of util responses re NUREG-0737,Items I.A.2.1, "Upgrading Reactor Operator & Senior Reactor Operator Training Qualifications" & Item II.B.4, "Training to Mitigate Core Damage."

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JOHN E. MAIER
Vice President

TELEPHONE
AREA CODE 716 546-2700

April 6, 1982

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis Crutchfield, Chief
Operating Reactor Branch #5
United States Nuclear Regulator Commission
Washington, D.C. 20555

RE: Mr. Crutchfield letter of March 23, 1982 concerning
TMI Action Plan Items I.A.2.1 and II.B.4.

Dear Mr. Crutchfield:

Rochester Gas & Electric Corporation responded to the Harold Denton letter of March 28, 1980 and NUREG 0737 item I.A.2.1 and item II.B.4 through several correspondences. The Ginna Training Programs were revised to address the recommendation, but our training programs do not reference contact hours on individual topics. Both the above documents did not reference contact hours for specific topics, and, therefore, our response addressed the recommendation of the NRC.

Each question will be individually addressed in an effort to clarify what was included in previous training relevant to your request.

Sincerely,

John E. Maier
Vice President
Electric and Steam Production

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XC: R. Morrill
B. Snow

1. Attachment A associated with the August 25, 1980 letter claims that Administrative Procedure A102.13, R.E. Ginna NRC Licensing Training Program teaches the subjects of heat transfer, fluid flow, thermodynamics and the use of installed plant system to mitigate an accident in which the core is severely damaged. Is the level of instruction comparable to that detailed in enclosures 2 and 3 of Denton's March 28, 1980, letter? Do these subjects involve 80 contact hours? (A contact hour is a one-hour period in which the course instructor is present or available for instructing or assisting students; lectures, seminars, discussions, problem-solving sessions, and examinations are considered contact periods under this definition.)

The level of instruction for the topics was comparable with those detailed in Mr. Denton's March 28, 1980 letter. The Table of Contents for the topic of Introduction to Physics, Thermodynamics, Fluid and Fluid Flow Principles, and Mitigating Core Damage are attached as part of question #6.

The training program does not address 80 contact hours. The material was covered as part of License Training and Requalification in Training at the noted times.

SPRING 1982 LICENSING CLASS

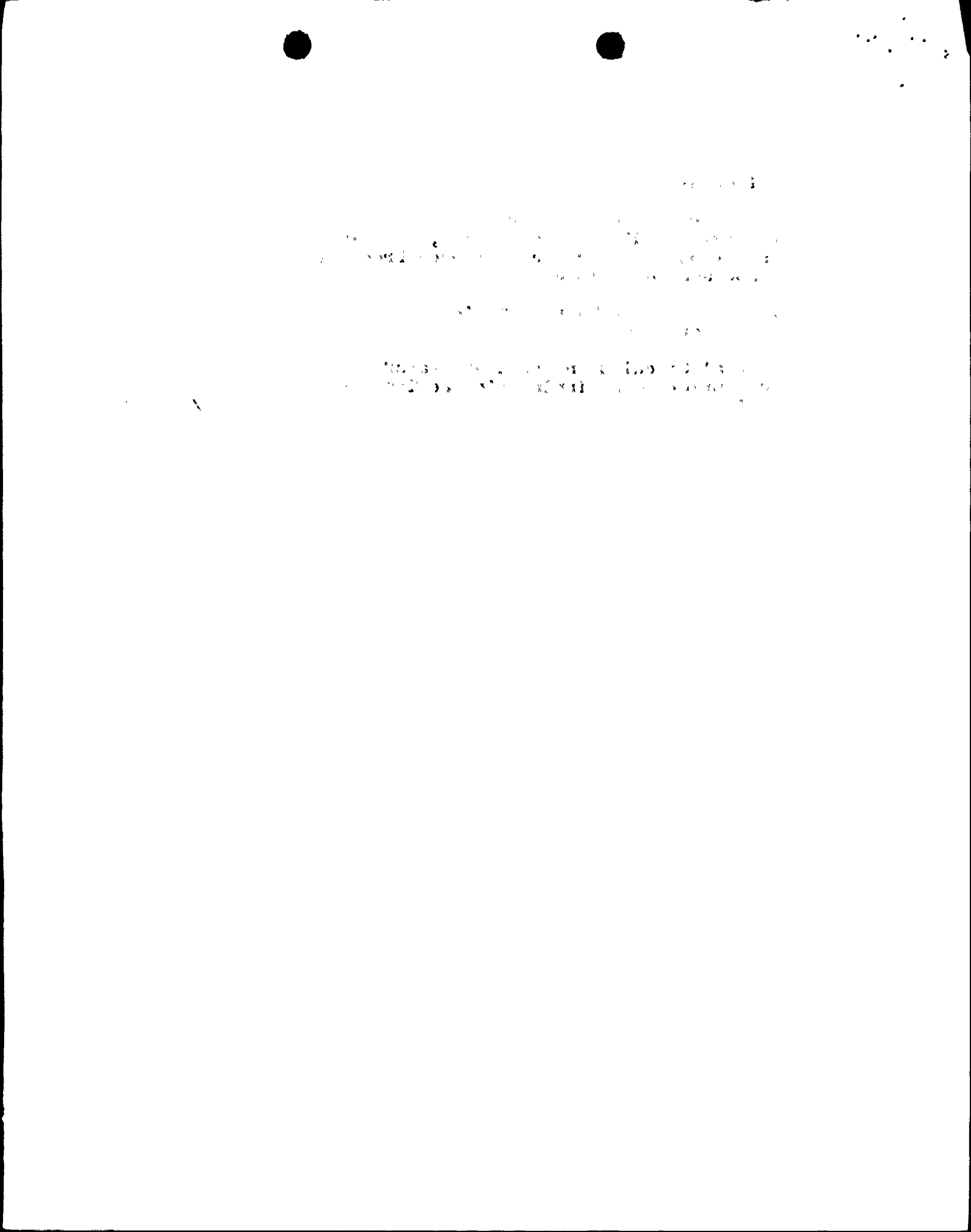
Heat Transfer and Fluid Flow with Pertinent NRC Type Exam Questions January/February 1982	10 Days
Mitigating Core Damage as part of training before starting License Training June - August 1982	4 Days

SUMMER 1981 LICENSING CLASS

Mitigating Core Damage June 1981	4 Days
Heat Transfer March 1981	6 Days

WINTER 1980 LICENSING CLASS

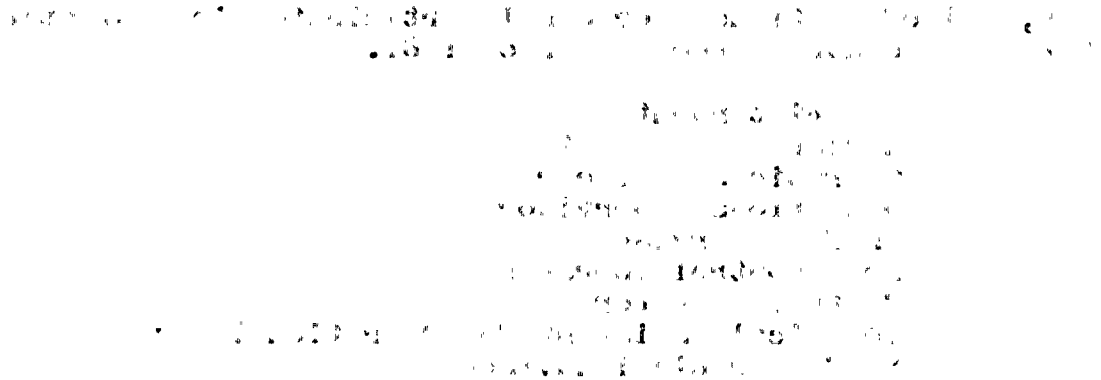
Plant Transient and Emergency Procedures involving Radiation Monitoring, Containment Isolation and specific Emergency Procedure Responses July 1980	5 Days
Introduction to Thermodynamics September 1980	4 Days
Natural Circulation and Heat Transfer just prior to beginning License Training April 1980	1 1/2 Days



2. Are the lectures and quizzes on the subject of accident mitigation given to shift technical advisors and operating personnel from the plant manager through the operations chain to the licensed operators? If they are, would you please provide the titles of the people who are trained and an organization chart which illustrates their position in the operations chain?

Yes, all of mentioned personnel participated in Mitigating Core Damage during the Summer of 1981.

Superintendent
Assistant Superintendent
Operations Engineer
Operations Supervisor
Shift Supervisor
Head Control Operator
Control Operator
Technical Assistant for Operational Assessment
Shift Technical Advisor



3. Does the training program described in Administrative Procedure A102.13 have an increased emphasis on dealing with reactor and plant transients as called for in enclosure 1 of Denton's March 28, 1980 letter? If there is, does the program address both normal and abnormal (accident) transients?

Yes, the program presently addresses additional time devoted to plant transients with the most significant changes being simulator use. Prior to 1980, the simulator was used only for startup certification.

Presently, we have added two additional weeks to the program for manipulations under normal and transient conditions. The overall program has been increased in scope and length to add more material dealing with plant responses.

4. Does the requalification program which addresses heat transfer, fluid flow, thermodynamics and the use of installed systems for accident mitigation involve 80 contact hours?

The program does not address 80 contact hours. However, the below topics address the Heat Transfer, Fluid Flow, Thermodynamics and the use of installed systems for Accident Mitigation.

	1980	1981	1982*
1. Annual Exam and Review Involves three days of review and a one day exam where above topics are two of the eight areas.		1 day	1 day
2. Mitigating Core Damage. See attached index included in question #6		4 days	
3. Introduction to Physics, Thermodynamics, Fluid and Fluid Flow Principles See attached index included in question #6	3 days	3 days	
4. Heat Transfer Introduction. See attached index included in question #6	2 days		
5. Accident Analysis involving Emergency Procedures. To address topics such as Inadequate Core Cooling and Natural Circulation		4 days	

The program does not address 80 control hours. However, the below topics address the most "Transfer" "Fluid Flow" "Thermo-dynamics" and the use of Installed Systems for Accident Mitigation.

	Topic	Topic	Topic
1. Annual Exam and review involve three days of review and a one day exam where above topics are two or one eight hours.		1 day	1 day
2. Well Testing Core Damage. See attached Index included in question #6		4 days	
3. Introduction to Physics, Thermodynamics, Fluid and Fluid Flow Principles See attached Index included in question #6	3 days	3 days	
4. Heat Transfer Introduction. See attached Index included in question #6	2 days		
5. Accident Analysis involving: Emergency Procedures. To address topics such as Unanticipated Core Cooling and Natural Circulation		4 days	

	1980	1981	1982*
6. Radiation Monitoring System/Containment Isolation System. Addressing the use of RMS to evaluate and mitigate accident and function of Containment Isolation to controlling release	1 day		
7. Sping Radiation Monitor. Addressing the new installed high range monitor for evaluation and projection of doses		1 day	

*Actual days completed prior to April 1, 1982. Additional training shall be provided during 1982.

	1980	1981	1982
and projection of doses.		1 day	
7. Spring Re-Entry Monitor. Re-Installed in Trans-Positional Site new position to controlling isolation pallets	1 day		
8. Radiation Monitoring System/Containment Isolation System. Modification site req. of R.S to evaluate and implement changes			

examining shall be provided during 1982.

Second days completed prior to April 1, 19 . . . visitors

5. Administrative procedure A102.14 lists in Section 2.1 control manipulations which are part of the requalification program. Manipulation 22 is titled "Loss of Instrument Bus." Does this include "Loss of Protective System Channel" which is item (17) of enclosure 4 of Denton's March 28, 1980 letter?

At Ginna Station we have four instrument buses. Each feed from a separate source. These buses each feed one reactor protection channel. Therefore, loss of an instrument bus is equivalent to loss of a protective system channel.

6. For item II.B.4 provide an outline of the training program for Mitigating Core Damage, including the number of training hours involved. Your outline can include any training program which relates to the training for Mitigating Core Damage. Follow the guidelines given in the enclosure 3 of H. R. Denton's letter dated March 28, 1980 and INPO Guidelines for Training to Recognize and Mitigate the Consequences of Core Damage (Document Number STG-01, Rev. 1, January 15, 1981). NRC requires minimum of 80 contact hours of training for Mitigating Core Damage.

Attached are the lesson outlines used to address the topics relevant to Mitigating Core Damage. Our programs do not address hours, but in question number 4 included are the days of instruction for each topic during the past two years.

WESTINGHOUSE
MITIGATING CORE DAMAGE

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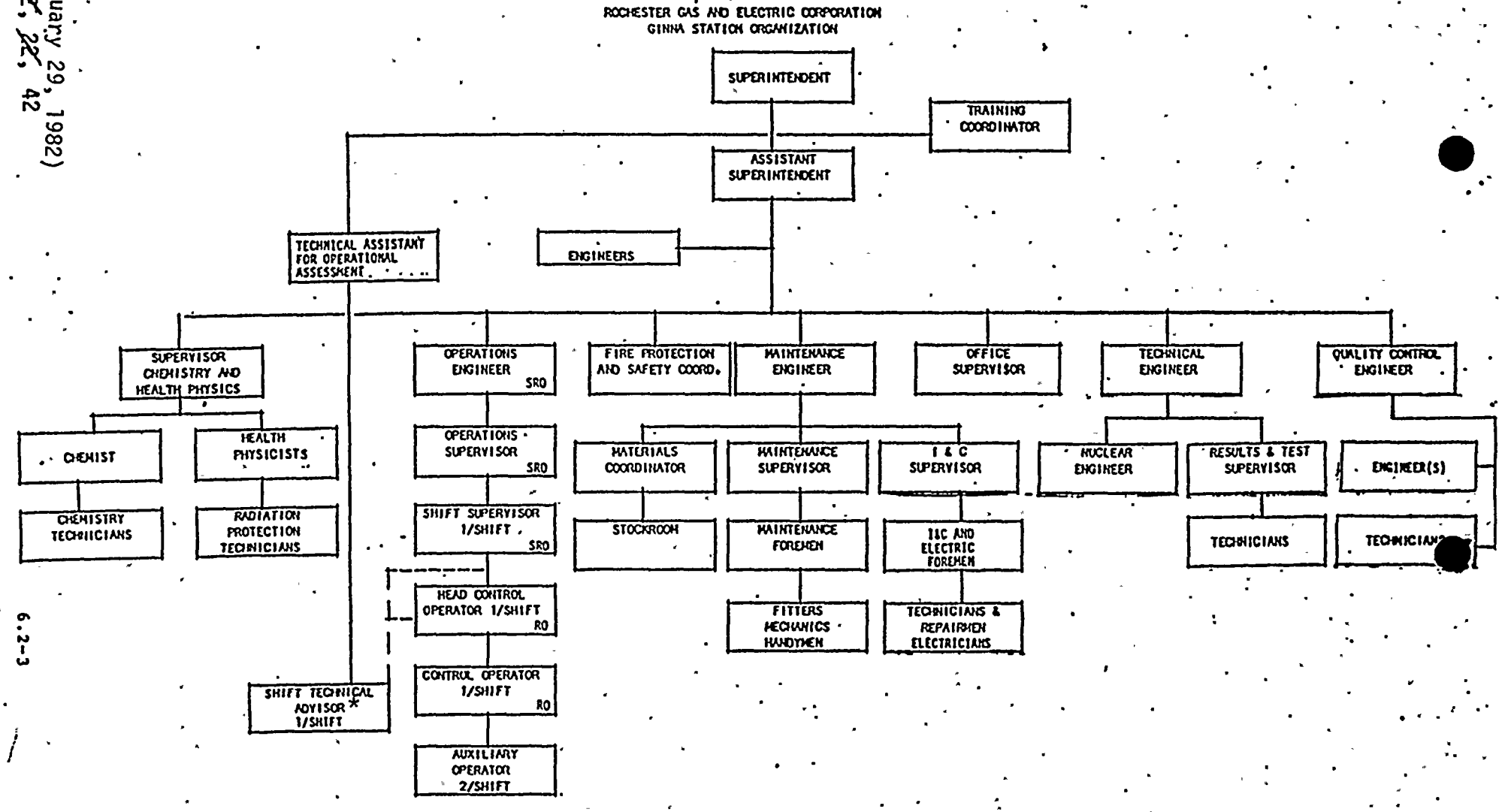
CORE COOLING MECHANICS

(Correction January 29, 1982)
Amendment No. 12, 22, 42



*STA not required during refueling or cold shutdown modes.

Figure 6.2-2

POTENTIALLY DAMAGING SITUATIONS

SMALL BREAK LOCA'S - NO HIGH HEAD SAFETY INJECTION

POTENTIALLY DAMAGING SITUATIONS
LOSS OF FEEDWATER - INDUCED LOSS OF COOLANT ACCIDENTS

RECOGNIZING CORE DAMAGE
IN-CORE INSTRUMENTATION

EXCORE INSTRUMENTATION
TO
POST ACCIDENT CONDITIONS

POST-ACCIDENT PRIMARY RADIOCHEMISTRY

RADIOLOGICAL ASPECTS OF CORE DAMAGE

INTRODUCTION TO PHYSICS, THERMODYNAMICS, FLUID AND FLUID FLOW PRINCIPLES

Ginna 1980
Revision 3
06/25/81

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OPERATOR REQUALIFICATION TRAINING 3/25/80 to 5/30/80

Heat Transer Introduction

The following topics were covered:

Definitions of Terms
Types of Heat Transfer
Types of Boiling
Reynolds Number, Lamerian and Turbulent Flow
Pipe Friction
Overall Heat Transfer Coefficient
Heat Flow from a Fuel Rod
$Q = cpm\Delta T$
$Q = UA\Delta T$
Calerometric
DNB, Burnout, Flow Instability
Hot Channel Factors
Quad to Average Power Tilt

License Requalification Training 7/29/80 through 8/29/80

Radiation Monitoring System
Containment Isolation

Lecture includes the following topics and procedures:

Hydrogen Accumulation in Containment

Principles of Operation G.M. & Scintillation

E-16.1, High Activity RMS

E-16.2, High Iodine in Plant Vent

E-28, RCS Leak

SC-1.2, Local Radiation Emergency

SC-1.6, Release to Lake

T-35A, Ventilation System Startup & Shutdown

Technical Specification Changes 33 and 34