

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8212090154      DOC. DATE: 82/12/03      NOTARIZED: NO      DOCKET #  
 FACIL: 50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe      05000220  
 AUTH. NAME      AUTHOR AFFILIATION  
 MANGAN, C.V.      Niagara Mohawk Power Corp.  
 RECIP. NAME      RECIPIENT AFFILIATION  
 EISENHUT, D.G.      Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards results of automatic depressurization sys logic studies & description of proposed mods. Studies included BWR small break LOCA accident outside primary containment, safe shutdown analysis & Mark I containment load mitigation.

DISTRIBUTION CODE: A001S      COPIES RECEIVED: LTR    ENCL    SIZE:   4    
 TITLE: OR Submittal: General Distribution

NOTES:

	RECIPIENT		COPIES			RECIPIENT		COPIES	
	ID	CODE/NAME	LTR	ENCL		ID	CODE/NAME	LTR	ENCL
	NRR	ORB2 BC	01	7	7				
INTERNAL:	ELD/HDS3			1	0	NRR/DL DIR		1	1
	NRR/DL/ORAB			1	0	NRR/DSI/RAB		1	1
	<u>REG FILE</u>	04		1	1	RGN1		1	1
EXTERNAL:	ACRS	09		6	6	LPDR	03	1	1
	NRC PDR	02		1	1	NSIC	05	1	1
	NTIS			1	1				

TOTAL NUMBER OF COPIES REQUIRED: LTR 23 ENCL 21

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED  
DATE 08-14-2001 BY 60322 UCBAW/STP

THIS DOCUMENT CONTAINS INFORMATION OF A CONFIDENTIAL NATURE  
AND IS INTENDED FOR THE USE OF THE PERSONNEL OF THE  
DEPARTMENT OF DEFENSE AND ITS AGENCIES ONLY.

CONFIDENTIAL - SECURITY INFORMATION

CLASSIFICATION	GROUP	CONTROL	EXEMPTION	REASON
CONFIDENTIAL	1	1	1	1.01
CONFIDENTIAL	1	1	1	1.01
CONFIDENTIAL	1	1	1	1.01
CONFIDENTIAL	1	1	1	1.01
CONFIDENTIAL	1	1	1	1.01
CONFIDENTIAL	1	1	1	1.01

December 3, 1982

Mr. Darrell G. Eisenhut, Director  
Division of Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Re: Nine Mile Point Unit 1  
Docket No. 50-220  
DPR-63

Dear Mr. Eisenhut:

Our letter of September 30, 1982 indicated a description of proposed modifications to the automatic depressurization system logic would be provided by December 3, 1982. The proposed modifications to the logic system were to encompass the results of three independent studies involving the automatic depressurization system. These studies included:

- Boiling Water Reactor Owners Group study to address a small-break loss-of-coolant accident outside the primary containment.
- Appendix R safe shutdown analysis.
- Mark I Containment load mitigation.

The results of the studies performed to date and how they affect on the automatic depressurization system logic are discussed in the attachment to this letter.

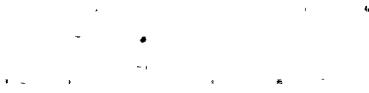
Sincerely,

*C. V. Mangan*

C. V. Mangan  
Vice President Nuclear Engineering  
and Licensing

CVM/RJP:bd

*A001*



NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT UNIT 1

AUTOMATIC DEPRESSURIZATION SYSTEM

The following discussion encompasses three studies performed or currently underway with respect to the automatic depressurization system logic at Nine Mile Point Unit 1. These studies are as follows:

A. Boiling Water Reactor Owners Group Study

This study was transmitted to the NRC by Mr. T.J. Dente, Chairman Boiling Water Reactor Owners Group by letter dated October 28, 1982. Based on our review of this study and the options discussed therein, modifications are not required to the automatic depressurization system logic at Nine Mile Point Unit 1. Implementation of system oriented emergency procedure guidelines, along with the current logic satisfies the intent of NUREG 0737 item II.K.3.18. These procedures provide additional guidance for use of the automatic depressurization system beyond that previously available.

The current revision of the system oriented emergency procedure guidelines was written assuming no modifications to the current automatic depressurization system initiation logic. The guidelines enable the operator to maintain control during conditions of increasing levels of degradation (system failures) and provide specific guidance on when manual initiation of the automatic depressurization system is required. Events requiring manual depressurization were analyzed including reactor pressure vessel isolation with a break located outside of the drywell. For this event, the operator has in excess of 10 minutes to manually depressurize the reactor pressure vessel in order to permit operation of the core spray injection system and prevent excessive fuel cladding heat up.

B. Appendix R Safe Shutdown Analysis

Our letter of December 3, 1982 provides a detailed description of proposed modifications to the Automatic Depressurization System logic. These are summarized below.

To prevent spurious actuation from occurring, the following modifications are required.

1. Add interposing relay contacts in the DC circuit for each valve and locate these contacts in another fire area which is independent of the control complex.
2. Modify the existing sensor logic to neutralize the actuation on loss of power to both reactor protection system busses 11 and 12.



[The page contains extremely faint and illegible text, likely bleed-through from the reverse side of the document. The text is scattered across the page and does not form any recognizable words or sentences.]

The additional logic will be located outside the control complex. This additional logic will be one out of two low-low-low level and one out of two high drywell pressure for either channel 11 or channel 12. It will also be energized to actuate. In addition, manual actuation from the control room will be permitted via a control switch relay assembly. The additional relay (located outside the control room) will be controlled by a switch (located inside the control room) which normally shorts out this relay in addition to interrupting power to this relay. These features prevent spurious actuation.

C. Mark I Load Mitigation Study

A two phase study is currently in progress. The purpose of this two phase study is to evaluate options related to mitigation of loads associated with subsequent relief valve operation.

Phase 1 evaluated the capability of the Emergency Condenser System for small and intermediate sized breaks to reduce the number of relief valve actuations. Preliminary results of this phase indicates actuation of relief valves would occur with an elevated water leg condition present, resulting in potential damaging thrust loads in the relief valve discharge lines. As a result, we are proceeding with the Phase 2 study. Phase 2 will evaluate automatic depressurization system logic modifications to prevent these loads. Two options will be evaluated.

1. Low-Low Set and Automatic Depressurization System Initiation Logic Modification

Low-low set is a logic scheme which changes the setpoints of two relief valves under the following conditions. Given a signal representing relief valve actuation and either a reactor scram or a main steam isolation valve closure, the circuit lowers the opening and closing setpoint pressures of two relief valves which increases their blowdown window. This provides sufficient reactor blowdown to prevent reactor repressurization and subsequent relief valve lift during the predicted elevated water leg period. Automatic depressurization system initiation logic will keep any low-low set relief valve open once the automatic depressurization system timer is started. Any low-low set valve which opens due to a pressure signal while the timer is running will also remain open.

2. Setpoint Changes and Automatic Depressurization System Inhibit Modification

Relief valve opening and closing setpoints will be repositioned to increase the reactor blowdown with relief valve actuation and to ensure that the relief valve opening and closing sequence is predictable. The setpoints will be repositioned so that two valves, one from each division, open first and close last. The amount of blowdown will be enough to ensure that the repressurization time is greater than the time that the elevated water leg is predicted to exist. This will prevent a subsequent actuation of a relief valve during that period. To assure that



11  
12  
13

14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100



the automatic depressurization system will not open a valve in this sequence, an automatic depressurization system inhibit will be provided. This system will involve placing a time delay relay in the relief valve logic circuit which will prevent the relief valve from opening due to automatic depressurization system demand during the elevated water leg period. The relay will sense relief valve position (open or closed) and block the automatic depressurization system signal to the affected valve(s) for a set time (i.e. a few seconds) following relief valve closure.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is essential for the proper management of the organization's finances and for ensuring compliance with applicable laws and regulations.

2. The second part of the document outlines the specific procedures that should be followed when recording transactions. This includes the use of standardized forms and the requirement that all entries be supported by appropriate documentation.

3. The third part of the document discusses the role of the accounting department in the overall financial management process. It highlights the department's responsibility for providing timely and accurate financial information to management and other stakeholders.

4. The fourth part of the document addresses the issue of internal controls. It explains how these controls are designed to prevent and detect errors and fraud, and how they contribute to the overall reliability of the financial reporting process.

5. The fifth part of the document discusses the importance of regular audits. It explains how audits provide an independent assessment of the organization's financial statements and internal controls, and how they help to identify areas for improvement.

6. The sixth part of the document discusses the role of the board of directors in the financial management process. It explains how the board is responsible for overseeing the organization's financial performance and for ensuring that the financial reporting process is transparent and accountable.

7. The seventh part of the document discusses the importance of communication in the financial management process. It explains how clear and consistent communication is essential for ensuring that all stakeholders have a clear understanding of the organization's financial position and for identifying and addressing any issues that may arise.

8. The eighth part of the document discusses the importance of ongoing monitoring and evaluation of the financial management process. It explains how this process helps to identify areas for improvement and to ensure that the organization's financial management practices remain up-to-date and effective.

9. The ninth part of the document discusses the importance of training and development in the financial management process. It explains how providing ongoing training and development opportunities for staff helps to ensure that they have the skills and knowledge needed to perform their roles effectively.

10. The tenth part of the document discusses the importance of ethical considerations in the financial management process. It explains how ethical behavior is essential for maintaining the trust and confidence of stakeholders and for ensuring the long-term success of the organization.

11. The eleventh part of the document discusses the importance of transparency in the financial management process. It explains how transparency helps to build trust and confidence among stakeholders and to ensure that the organization's financial reporting process is fair and unbiased.

12. The twelfth part of the document discusses the importance of accountability in the financial management process. It explains how accountability helps to ensure that all staff are responsible for their actions and that the organization's financial management practices are held to a high standard.

13. The thirteenth part of the document discusses the importance of risk management in the financial management process. It explains how risk management helps to identify and assess potential risks to the organization's financial performance and to develop strategies to mitigate these risks.

14. The fourteenth part of the document discusses the importance of innovation in the financial management process. It explains how innovation helps to improve the efficiency and effectiveness of the financial management process and to identify new opportunities for growth.

15. The fifteenth part of the document discusses the importance of collaboration in the financial management process. It explains how collaboration helps to ensure that all stakeholders are working together to achieve the organization's financial goals and to address any challenges that may arise.

16. The sixteenth part of the document discusses the importance of the financial management process in the overall success of the organization. It explains how the financial management process is a key driver of the organization's performance and that it plays a critical role in ensuring the organization's long-term success.

17. The seventeenth part of the document discusses the importance of the financial management process in the overall success of the organization. It explains how the financial management process is a key driver of the organization's performance and that it plays a critical role in ensuring the organization's long-term success.

18. The eighteenth part of the document discusses the importance of the financial management process in the overall success of the organization. It explains how the financial management process is a key driver of the organization's performance and that it plays a critical role in ensuring the organization's long-term success.

19. The nineteenth part of the document discusses the importance of the financial management process in the overall success of the organization. It explains how the financial management process is a key driver of the organization's performance and that it plays a critical role in ensuring the organization's long-term success.

20. The twentieth part of the document discusses the importance of the financial management process in the overall success of the organization. It explains how the financial management process is a key driver of the organization's performance and that it plays a critical role in ensuring the organization's long-term success.