

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8408060248    DOC. DATE: 84/07/31    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  
 VASSALLO, D.B.    Operating Reactors Branch 2

SUBJECT: Forwards addl response to Generic Ltr 83-28 re generic implications of Salem ATWS events. Reactor protection sys on-line surveillance program requirements assure reliability of sys to function properly.

DISTRIBUTION CODE: A055S    COPIES RECEIVED: LTR 1 ENCL 1    SIZE: 4  
 TITLE: OR/Licensing Submittal: Salem ATWS Events GL-83-28

NOTES: 05000220  
 OL: 08/22/69

	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL
	NRR ORB2 BC 01	3 3		
INTERNAL:	ADM-LFMB	1 0	ELD/HDS3	1 0
	IE/DQASIP	1 1	NRR/DE/EQB	1 1
	NRR/DE/MEB	1 1	NRR/DHFS/HFEB	1 1
	NRR/DHFS/LQB	1 1	NRR/DHFS/PSRB	1 1
	NRR/DL DIR	1 1	NRR/DL/ORAB	1 1
	NRR/DL/SSPB	1 1	NRR/DL/TAPMG	1 1
	NRR/DSI/ASB	1 1	NRR/DSI/ICSB	2 2
	NRR/DSI/PSB	1 1	NRR/DSI/RSB	1 1
	REG FILE 04	1 1	RGN1	1 1
EXTERNAL:	ACRS	6 6	LPDR 03	1 1
	NRC PDR 02	1 1	NSIC 05	1 1
	NTIS	1 1		

TOTAL NUMBER OF COPIES REQUIRED: LTR 32 ENCL 30

1

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

5708 S. UNIVERSITY AVENUE

CHICAGO, ILLINOIS 60637

TEL: 773-936-3700

FAX: 773-936-3701

WWW: WWW.PHYSICS.UCHICAGO.EDU

PHYSICS 101

PHYSICS 102

PHYSICS 103

PHYSICS 104

PHYSICS 105

PHYSICS 106

PHYSICS 107

PHYSICS 108

PHYSICS 109

PHYSICS 110

PHYSICS 111

PHYSICS 112

PHYSICS 113

PHYSICS 114

PHYSICS 115

PHYSICS 116

PHYSICS 117

PHYSICS 118

PHYSICS 119

PHYSICS 120

PHYSICS 121

PHYSICS 122

PHYSICS 123

PHYSICS 124

PHYSICS 125

PHYSICS 126

PHYSICS 127

PHYSICS 128

PHYSICS 129

PHYSICS 130

PHYSICS 131

PHYSICS 132

PHYSICS 133

PHYSICS 134

PHYSICS 135

PHYSICS 136

PHYSICS 137

PHYSICS 138

PHYSICS 139

PHYSICS 140

PHYSICS 141

PHYSICS 142

PHYSICS 143

PHYSICS 144

PHYSICS 145

PHYSICS 146

PHYSICS 147

PHYSICS 148

PHYSICS 149

PHYSICS 150

PHYSICS 151

PHYSICS 152

PHYSICS 153

PHYSICS 154

PHYSICS 155

PHYSICS 156

PHYSICS 157

PHYSICS 158

PHYSICS 159

PHYSICS 160

PHYSICS 161

PHYSICS 162

PHYSICS 163

PHYSICS 164

PHYSICS 165

PHYSICS 166

PHYSICS 167

PHYSICS 168

PHYSICS 169

PHYSICS 170

PHYSICS 171

PHYSICS 172

PHYSICS 173

PHYSICS 174

PHYSICS 175

PHYSICS 176

PHYSICS 177

PHYSICS 178

PHYSICS 179

PHYSICS 180

PHYSICS 181

PHYSICS 182

PHYSICS 183

PHYSICS 184

PHYSICS 185

PHYSICS 186

PHYSICS 187

PHYSICS 188

PHYSICS 189

PHYSICS 190

PHYSICS 191

PHYSICS 192

PHYSICS 193

PHYSICS 194

PHYSICS 195

PHYSICS 196

PHYSICS 197

PHYSICS 198

PHYSICS 199

PHYSICS 200

PHYSICS 201

PHYSICS 202

PHYSICS 203

PHYSICS 204

PHYSICS 205

PHYSICS 206

PHYSICS 207

PHYSICS 208

PHYSICS 209

PHYSICS 210

PHYSICS 211

PHYSICS 212

PHYSICS 213

PHYSICS 214

PHYSICS 215

PHYSICS 216

PHYSICS 217

PHYSICS 218

PHYSICS 219

PHYSICS 220

PHYSICS 221

PHYSICS 222

PHYSICS 223

PHYSICS 224

PHYSICS 225

PHYSICS 226

PHYSICS 227

PHYSICS 228

PHYSICS 229

PHYSICS 230

PHYSICS 231

PHYSICS 232

PHYSICS 233

PHYSICS 234

PHYSICS 235

PHYSICS 236

PHYSICS 237

PHYSICS 238

PHYSICS 239

PHYSICS 240

PHYSICS 241

PHYSICS 242

PHYSICS 243

PHYSICS 244

PHYSICS 245

PHYSICS 246

PHYSICS 247

PHYSICS 248

PHYSICS 249

PHYSICS 250

PHYSICS 251

PHYSICS 252

PHYSICS 253

PHYSICS 254

PHYSICS 255

PHYSICS 256

PHYSICS 257

PHYSICS 258

PHYSICS 259

PHYSICS 260

PHYSICS 261

PHYSICS 262

PHYSICS 263

PHYSICS 264

PHYSICS 265

PHYSICS 266

PHYSICS 267

PHYSICS 268

PHYSICS 269

PHYSICS 270

PHYSICS 271

PHYSICS 272

PHYSICS 273

PHYSICS 274

PHYSICS 275

PHYSICS 276

PHYSICS 277

PHYSICS 278

PHYSICS 279

PHYSICS 280

PHYSICS 281

PHYSICS 282

PHYSICS 283

PHYSICS 284

PHYSICS 285

PHYSICS 286

PHYSICS 287

PHYSICS 288

PHYSICS 289

PHYSICS 290

PHYSICS 291

PHYSICS 292

PHYSICS 293

PHYSICS 294

PHYSICS 295

PHYSICS 296

PHYSICS 297

PHYSICS 298

PHYSICS 299

PHYSICS 300

July 31, 1984

Director of Nuclear Reactor Regulation  
Attention: Mr. Domenic B. Vassallo, Chief  
Operating Reactors Branch No. 2  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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

Dear Mr. Vassallo:

Our April 30, 1984 letter, as supplemented by our July 2, 1984 letter, provided information and schedules related to the generic implications of the Salem Anticipated Transient Without Scram Events (Generic Letter 83-28). Attached is additional information in response to Generic Letter 83-28.

Sincerely,

NIAGARA MOHAWK POWER CORPORATION

*C. V. Mangan*

C. V. Mangan  
Vice President  
Nuclear Engineering and Licensing

RJP/djm  
Attachment

8408060248 840731  
PDR ADOCK 05000220  
P PDR

*Floss*  
*1/1*



10-11-54

RECEIVED  
FEDERAL BUREAU OF INVESTIGATION  
U. S. DEPARTMENT OF JUSTICE  
WASHINGTON, D. C.

TO : SAC, NEW YORK  
FROM : SAC, PHOENIX  
SUBJECT: [Illegible]

Reference is made to your letter of 10/11/54 and the information therein regarding the activities of [Illegible] in the Phoenix area.

Very truly yours,  
[Illegible Signature]

Enclosed for the New York Office are two copies of a report dated 10/11/54 and captioned as above.

ADDITIONAL INFORMATION REGARDING GENERIC LETTER 83-28

I. Reactor Trip System Equipment List (Section 2.1)

Niagara Mohawk does not currently plan to develop a specific list of components that would comprise a reactor trip system. The reactor trip function is accomplished at Nine Mile Point Unit 1 by utilizing redundant plant process instrumentation that input to a one-out-of-two twice logic system. These signals initiate a reactor trip (rapid control rod insertion i.e. scram) by deenergizing solenoid operated scram pilot valves that vent air from the reactor scram valves. Additional information is available in our current FSAR Section VIII, "Instrumentation and Control."

The components that contribute to the reactor trip function are contained in several systems rather than one reactor trip system. Those systems whose components contribute to the reactor trip function include reactor protection system, reactor vessel instrumentation system, neutron monitoring system and control rod drive system. Therefore, a new system identified as the reactor trip system would cause unnecessary inconsistencies with existing Nine Mile Point Unit 1 system nomenclature. This would require extensive revision to existing documentation and training program with no resultant enhancement of safety.

In addition, as indicated in our February 29, 1984 correspondence, a task is currently underway to upgrade the details of our equipment classification list (Q-list). This will provide additional assurance that those components which contribute to the reactor trip function are appropriately classified as safety related.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author details the various methods used to collect and analyze the data. This includes both manual and automated processes. The goal is to ensure that the information is both reliable and up-to-date.

The third part of the document focuses on the results of the analysis. It shows a clear trend of growth over the period studied. This is supported by several key figures and percentages that illustrate the overall performance.

Finally, the document concludes with a series of recommendations for future actions. These are based on the findings of the analysis and aim to optimize the current processes and improve overall efficiency.

## II. On-Line Functional Testing of Scram Pilot Valves and Backup Scram Valves (Section 4.5)

Generic Letter 83-28, Section 4.5 recommends on-line functional testing of scram pilot valves and scram backup valves. At Nine Mile Point Unit 1, the scram pilot air system controls and supplies air to operate the scram valves and the scram discharge volume vent and drain valves. The control air is supplied through two backup scram solenoid operated air valves to the scram pilot valves at the individual control rod drive hydraulic control units and the scram discharge volume vent and drain valves. The backup scram valves receive signals from the reactor protection system, as do the pilot solenoids, to each scram, vent and drain valve providing redundancy and increasing system reliability. The backup scram valves are design similar to the scram pilot valves in that they are AC powered and deenergize to operate. Should any of the scram pilot valves fail to function, the action of the backup scram valves assure that the control rods insert, thus, enhancing the reliability of the reactor trip function. No credit is taken for the backup scram valves in our FSAR, Section XV, "Safety Analysis" nor are they necessary to satisfy regulatory requirements.

Current testing of the backup scram valves is accomplished through the existing technical specification surveillance program. As explained in our letter of November 8, 1983, the surveillance tests, taken together, functionally test the trip system from the sensing instrument, through the trip logic circuitry, to the scram pilot valves including the backup scram valves. The surveillance procedures are written to test the one-out-of-two taken twice logic in such a manner that the channels are tested independently. This allows one-half of the necessary logic to "makeup," actuating the entire trip channel up to and including one out of the two scram pilot valves on every control rod's scram inlet and discharge valves and one of the two backup scram valves.

Scram testing is performed during each operating cycle. This scram time testing demonstrates the action of the pilot scram valves and scram inlet and discharge valves.

Based on the above, additional on-line functional testing of the backup scram valves is unwarranted. We are, however, evaluating the feasibility of additional testing of the backup scram valves during refueling outages. Our schedule calls for completing this evaluation by December 1984.

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO  
 DIVISION OF THE PHYSICAL SCIENCES  
 DEPARTMENT OF CHEMISTRY  
 5708 S. UNIVERSITY AVENUE  
 CHICAGO, ILLINOIS 60637  
 TEL: 773-936-3700  
 FAX: 773-936-3700  
 WWW: WWW.CHEM.UCHICAGO.EDU

THE UNIVERSITY OF CHICAGO  
 DIVISION OF THE PHYSICAL SCIENCES  
 DEPARTMENT OF CHEMISTRY  
 5708 S. UNIVERSITY AVENUE  
 CHICAGO, ILLINOIS 60637  
 TEL: 773-936-3700  
 FAX: 773-936-3700  
 WWW: WWW.CHEM.UCHICAGO.EDU



### III. Reactor Trip System Reliability (System Functional Testing) - (Section 4.5)

Nine Mile Point Unit 1 on-line functional testing and testing intervals are performed consistent with our Technical Specifications. The following reactor trips are functionally tested on-line.

- Manual Scram
- High Reactor Pressure
- High Drywell Pressure
- Low Reactor Water Level
- High Water Level Scram Discharge Volume
- Main Steam Line Valve Position
- High Radiation Main Steam Line
- Neutron Flux
  - Intermediate Range Monitor (IRM) (when required)
  - Average Power Range Monitors
- Turbine Valve Closure
- Generator Load Rejection

In addition, the shutdown position of the reactor mode switch scram function is tested during refueling outages. During the testing discussed above, the scram pilot solenoid valves and backup scram valves are tested, in that one of the two scram pilot valves on every control rod scram inlet and outlet valves and one of the two backup scram valves are activated. Also, overvoltage, undervoltage and underfrequency protection is provided for the motor generator sets and maintenance bus that supply power to the reactor protection bus and reactor trip bus including power to the scram pilot valves and backup scram valves.

Section XV, "Safety Analysis" of our current FSAR discusses single failure caused transients which are unlikely, but have a distinct probability of occurrence during the life of the plant. For the major transients evaluated, the number of independent scram features which are available to terminate a particular transient are listed in our FSAR (Table XV-I). Therefore, it can be demonstrated that adequate redundancy exists in the Nine Mile Point Unit 1 design to provide protection against multiple independent sensor failures.

In summary, the current reactor protection system on-line surveillance program requirements, in terms of scope and testing intervals, in conjunction with multiple and diverse scram sensors assures the probability and reliability of the reactor trip system to function to effect control rod insertion and resulting reactor shutdown.

The first part of the document discusses the importance of maintaining accurate records. It emphasizes that every transaction must be properly documented to ensure transparency and accountability. This includes recording the date, amount, and purpose of each entry.

In the second section, the author details the various methods used to collect and analyze data. These methods include direct observation, interviews, and the use of specialized software tools. The goal is to gather comprehensive information that can be used to identify trends and patterns.

The third section focuses on the challenges faced during the data collection process. One major challenge is ensuring the reliability of the data sources. Another challenge is dealing with incomplete or inconsistent information. The author provides strategies to overcome these challenges, such as cross-verifying data from multiple sources and using statistical techniques to fill in missing data.

Finally, the document concludes with a summary of the findings and recommendations. It highlights the key insights gained from the study and offers practical advice for future research and implementation. The author stresses the need for ongoing monitoring and evaluation to ensure the effectiveness of the proposed solutions.