

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER

TO:

Mr. George Lear

FROM:

Niagara Mohawk Power Corp.
Syracuse, New York
Mr. Gerald K. Rhode

DATE OF DOCUMENT

12/29/76

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DESCRIPTION

Ltr. w/attached....re our 11/24/76 ltr.
....concerning fission gas releases.

(3-P)

PLANT NAME:

Nine Mile Point Unit No. 1

ENCLOSURE

ACKNOWLEDGED

DO NOT REMOVE

SAFETY

FOR ACTION/INFORMATION

ENVIRO 1/6/77

RJL

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<input checked="" type="checkbox"/> BRANCH CHIEF:	Lear	<input type="checkbox"/> BRANCH CHIEF:
<input checked="" type="checkbox"/> PROJECT MANAGER:	Nowicki	<input type="checkbox"/> PROJECT MANAGER:
<input checked="" type="checkbox"/> LIC. ASST.:	Parrish	<input type="checkbox"/> LIC. ASST.:

INTERNAL DISTRIBUTION

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<input checked="" type="checkbox"/> NRC PDR		HEINEMAN		TEDESCO		ENVIRO ANALYSIS
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<input checked="" type="checkbox"/> GOSSICK & STAFF		ENGINEERING		IPPOLITO		ENVIRO TECH.
MIPC		MACARRY		KIRKWOOD		ERNST
CASE		KNIGHT				BALLARD
HANAUER		SIHWEIL		OPERATING REACTORS		SPANGLER
HARLESS		PAWLICKI		STELLO		
						SITE TECH.
PROJECT MANAGEMENT		REACTOR SAFETY		OPERATING TECH.		GAMMILL
BOYD	<input checked="" type="checkbox"/>	ROSS	<input checked="" type="checkbox"/>	EISENHUT (Lm.)		STAPP
P. COLLINS		NOVAK	<input checked="" type="checkbox"/>	SHAO		HULMAN
HOUSTON		ROSZTOCZY	<input checked="" type="checkbox"/>	BAER		
PETERSON	<input checked="" type="checkbox"/>	CHECK	<input checked="" type="checkbox"/>	BUTLER		SITE ANALYSIS
MELTZ	<input checked="" type="checkbox"/>	R. Meyer	<input checked="" type="checkbox"/>	GRIMES		VOLLNER
HELTEMES		AT & I	<input checked="" type="checkbox"/>	F. Coffman		BUNCH
SKOVHOLT		SALTZMAN	<input checked="" type="checkbox"/>	J. Eubert	<input checked="" type="checkbox"/>	J. COLLINS
		RUTBERG				KREGER

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<input checked="" type="checkbox"/> LPDR: Oswego, N. Y.	<input type="checkbox"/> NAT. LAB:	<input type="checkbox"/> BROOKHAVEN NAT. LAB.
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<input checked="" type="checkbox"/> NSIC:	<input type="checkbox"/> LA PDR	
<input type="checkbox"/> ASLB:	<input type="checkbox"/> CONSULTANTS:	
<input checked="" type="checkbox"/> ACRS/16 CYS HOLDING/SENT: Cat. B. (1/6/77)		

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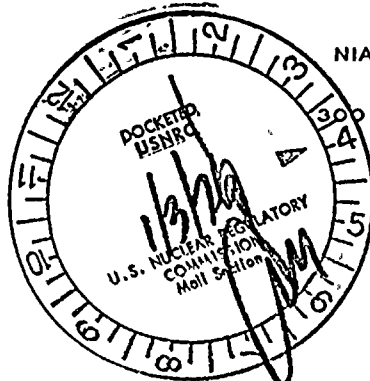
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NIAGARA MOHAWK POWER CORPORATION



NIAGARA  MOHAWK

300 ERIE BOULEVARD WEST
SYRACUSE, N.Y. 13202

Regulatory Docket File

December 29, 1976

Director of Nuclear Reactor Regulation
Attn: Mr. George Lear, Chief
Operating Reactors Branch #3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



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

Dear Mr. Lear:

Your letter of November 24, 1976 requested information regarding fission gas release rates from fuel pellets with high burnup. The attached information is in response to your request.

For Nine Mile Point Unit 1, the effects of the Nuclear Regulatory Commission fission gas release correction technique are bounded by results presented in a December 22, 1976 letter from G. E. Sherwood (General Electric) to D. F. Ross (NRC). For fuel exposures less than 20,000 megawatt-days per short ton, peak clad temperature changes are insignificant. For higher exposures, peak clad temperature increases are less than 85 F.

Sincerely,

NIAGARA MOHAWK POWER CORPORATION



GERALD K. RHODE
Vice President - Engineering

WRD/sz

Attachment



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Responses to November 24, 1976
Nuclear Regulatory Commission Questions

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

1. Question

Provide the estimated date on which any fuel rod in your facility will reach a local exposure (burnup) of 20,000 Megawatt-days per metric ton of Uranium (MWD/tU).

Response

The core at Nine Mile Point Unit 1 currently contains fuel with peak exposures in excess of 20,000 Megawatt-days per metric ton of Uranium.

2. Question

Using the correction technique described in the attached enclosure, modify the fission gas release model in the thermal performance code for the fuel in your facility and calculate the fission gas release, fuel rod pressure, fuel temperature, etc. for burnups to and including the target peak-rod burnup. Provide a comparison of the results of your calculations with those obtained using the uncorrected fission gas release model.

Response

Generic bounding analysis has been provided by General Electric in response b of Reference 1. Information corresponding to both 7x7 and 8x8 fuel shown for a BWR/2 is applicable to Nine Mile Point Unit 1. The NRC correction technique increases calculated fission gas release, fuel rod internal pressure and fuel temperatures for exposures greater than 20,000 MWD/tU.

3. Question

Describe the impact (if any) of larger fission gas releases on the LOCA analysis and other safety analyses for your facility.

Response

Impact of larger fission gas releases on Nine Mile Point Unit 1 safety analysis is provided in response c of Reference 1.

The LOCA analysis for fuel exposures below 20,000 MWD/Short Ton are unaffected. At fuel bundle exposures of 30,000 MWD/Short Ton, a conservative upper bound limit of 85 F peak clad temperature increase has been calculated. The temperature increases associated with Nine Mile Point Unit 1 are expected to be significantly lower.

Other safety analyses are relatively insensitive to increased fission gas release.

4. Question

If internal fuel rod pressures, as calculated using the above-mentioned fission gas release correction, are predicted to exceed the nominal system pressure for your facility, provide the date that this is anticipated to occur and discuss the implications of operating under both normal and accident conditions with fuel cladding tensile stresses.

Response

As stated in response d of Reference 1, the internal fuel rod pressures, as calculated using the NRC fission gas release correction, do not exceed the nominal Nine Mile Point Unit 1 system pressures.

REFERENCE

1. Letter dated December 22, 1976 from Mr. G. G. Sherwood (General Electric) to Mr. Denwood F. Ross (Nuclear Regulatory Commission).

