Γ	NRC FORM 195	• •	U.S. NU	CLE	AR REGULATORY CO	DO	CKET NUMBER 50-315/316	
• [FIL	E NUMBER		
	NRC DISTRIBUT	IUN FOR PAR	FOR PART 50 DUCKET MATERIAL				Enviro .	
Γ	TO: Mr. B.C. Rusche		FROM: Indiana & Mich Power Co			DA	TE OF DOCUMENT	
	*	•	New Y	orl	c, N.Y. 10004		3-16-77	
1		• 11	J. Tillinghast				3-21-77	
h	ELETTER ENOTO	RIZED	PROP .	<u></u>	INPUT FORM	NU	MBER OF COPIES RECEIVED	
	BORIGINAL BUNCLA	ASSIFIED	۰ ۲		•			
		<u> </u>					1. SIGNED	
1	DESCRIPTION Ltr notarized 3-17-77 request for a ENCLOSURE Attachment A is a revised pages 2.2-4							
	temporary change to tech specs to allow a one dealing with tech spec whaghe change IP time chemical cleaning operation of the unit & trans 2 condensate & feedwater systems & trans the Attachment B, C & D4P							
·	following: 5P				TOTAL: 5P			
	•	· · ·				(1 cy ea encl rc'd)		
	· · · ,							
	MACKN(WLEDG	ED,	•				
	163013110	_						
	•		-					
	· · 、 * · · ·							
	PLANT NAME: Cook Units	PLANT NAME: Cook Units 1 & 2 "						
							í , ,	
ľ	TO NOT DEMOVES							
	196 TV	OT WINT					· · ·	
	DHL					<u></u>		
-	SAFETY	DRMATION ENVIRO						
ŀ	ASSIGNED AD:	ab (5)	ASSIGNED AD					
. K	- PROJECT MANAGER -	Fle	tcher		PROJECT MANAGER:	•		
_	-LIC AST. :	ICT ASST. :			LIC, ASST, ;			
				•				
ŀ								
	AVEC FILE	C CVCTFMC	INTERNAL D	151	DI ANT SYSTEMS	••	CTTT CATETY C	
	INRC PDR	HETNEMA	N	. 	TEDESCO		FINTRO ANALYSTS	
st.	L. &. E (2)	SCHROED	ER		BENAROYA		DENTON & MULLER	
	OELD .				LAINAS			
	GOSSICK & STAFF	ENGINEE	RING		IPPOLITO		ENVIRO TECH.	
ľ	MIPC ·	MACARRY		·	KIRKWOOD		ERNST	
┝		BOSNAP	• • • • •		OPERATING PEACTORS	·	YOINGBLOOD	
┢	HARLESS	DAIN TOP	τ ,		STELLO	-		
┢			·*•				SITE TECH.	
ſ	PROJECT MANAGEMENT	REACTOR	SAFETY		OPERATING TECH.		GAMMILL	
Ľ	BOYD	ROSS			EISENHUT		STEPP	
	P. COLLINS	NOVAK			SHAO		HULMAN	
	HOUSTON	ROSZTOC	ZY		<u>BAER</u>		CTTP ANATYOTO	
┝	PETERSON	CHECK			BUTLER	├	VOLLMER	
┝	HELTEMES				<u>- GRIMES</u>	<u> </u>	BUNCH	
┢	SKOVHOLT	SALTZMA	N		······································	-	J. COLLINS	
ŀ		RUTBERG	,				KREGER	
ſ		• EXTERNAL	DISTRIBUTION				CONTROL NUMBER	
	LPDR: St Joseph, M) NAT. LAB	ŧ		BROOKHAVEN NAT. LAB.	1		
1	TIC:	REG V.IE		 	ULRIKSON (ORNL)	1		
4	NSIC:	LA PDR	ر 		4 	1	770820356	
-	ACRS & CVC VOTANI	CONSULTA	NTS:			1	LAND AND	
1	INCRO CIS HUNDING/					1		
N	90 500M 405 (0 70)							

ⁿ,≄"∦ • • •

4

A LA COLLAR A L Collar de la collar d Collar de la collar d

•

C - C - PRACE - HALLY

ň

INDIANA & MICHIGAN POWER COMPANY

P. O. BOX 18 BOWLING GREEN STATION NEW YORK, N. Y. 10004

March 16, 1977

Donald C. Cook Nuclear Plant Docket Nos. 50-315 and 50-316 DPR No. 58 and CPPR No. 61

REGULATORY DOCKET FILE COPY

Mr. Benard C. Rusche, Director Office of Nuclear Reactor Regulation U.S. Nuclear Regulatory Commission Washington, D.C. 20555

Dear Mr. Rusche:

This letter is a request for a temporary change to Environmental Technical Specification 2.2.3.2 to allow a one-time chemical cleaning operation of the Unit No. 2 Condensate and Feedwater Systems as described hereafter. Attachment A is a revised page 2.2-4 to indicate the change we propose.

As part of the startup operations for Unit No. 2 of the Donald C. Cook Nuclear Plant, it will be necessary to perform a hot detergent cleaning of the Unit No. 2 Condensate and Feedwater systems. The cleaning operation is a one-time preoperational hot water flush with a mild alkaline solution to remove small amounts of materials left in the piping internals during construction and is expected to take place during the second quarter of 1977. A similar operation was performed on Unit No. 1, from July 16 through 20, 1973, prior to its startup.

The specific objectives of the preoperational cleaning are:

1. To loosen and remove debris not removed by prior water flushing.

770820*35*6

A set of the set of

NNE 、GA おうせな

スタックスパイビーション アイマンデオ 一変変化 アイレス (1997年1月) スクアポアルビー レンイニー ハンゴント よたいわじ (1997年1月) コート・レント - 10 1997年1月日 - 10 10 10 10 10

A SET TO BORD BORD AND THE ADDRESS
A SET TO BORD ADDRESS ADD

2 1 13 ## ** S-....

Months etters is contracted at the structure of the structure of a second to the bookstock operation of the structure operation as a possion the structure of the second structure operation of the second three structures are also as a contracted boundation. The structure of the structure of the operation of the second to the source.

 సంగార్థం అందింది రాష్ట్రికి సంగార్థి సంగార్ సంధారార్థి సంగార్థి సంగార్ధీ సంగార్ధీ సంగార్థి సంగార్థీ సంగార్థి సంగార్థి సంగార్థి సంగార్ధీరి సంగార్థి సంగారాధ్రి స

- 「「「NDVをえて来」でした。 パート・パース・パース・ストレスをでして作り」。「 しゃかし、 かし、 たいので、 たい、 たい、 たい、 たい、 たい、 たい、 たい、

March 16, 1977

- 2. To remove from the system piping internals any coatings or preservatives applied prior to or during construction.
- 3. To formaa protective oxide coating on the carbon steel portions of the system prior to initial startup.

The "cleaning" will be done by circulating approximately 300,000 gallons of a 180° - 190°F. solution of tri- and di-sodium phosphate throughout the system for approximately 12-24 hours and then flushing to the on-site absorption field with approximately 600,000 gallons of clean water.

The composition of the cleaning solution will be as follows:

- a. 3,500 ppm Tri-sodium phosphate (Na3PO4).
- b. 1,500 ppm Di-sodium phosphate (Na_2HPO_4) .
- c. 300 ppm Surfactant (mixture of nonionic and anionic surfactants - Dow Industrial Service proprietary chemical No. F0-57.)
- d. 200 ppm Anti-foaming Agent (silicone base anti-foam emulsion - Dow Industrial Service priprietary chemical No. MO-45).

The cleaning solution and rinse waters will be drained from the Condensate and Feedwater Systems to the turbine room sump and pumped to the on-site absorption field.

Section 2.2.3.2 of the Donald C. Cook Nuclear Plant Environmental Technical Specifications places the following limitations on the conduct of the cleaning operation:

1. "Chemicals used in the plant shall be diluted and neutralized as required to give a pH in the range of 5.5 to 9 prior to discharge to the onsite absorption field."

. . . .

- ಡಿನ №೧೫೦೩೦೮೦ ಇರುಂದಿಗಳು ನಿರ್ದಾನ ಕ್ರಿಲಿಗಳ ಹಿಳಿದ್ದರೂ ನಿ≣ಿಗಳು ನಿ ರಾಜನಾಗಿಕರು ಇರಿ - ನಗರನ್ನಿಕ್ಕಿನ ನಾಡು ಕ್ರಿಲಿನಲ್ ತಿಡಿಸ್ ಹೊಂತಿಗಳ ವೇಶವಾಗಿ ರಾಜನಾವರ ರಹಿತಿಯಾ.
- ఎం. కారు కురాగుడు భూరాలాడికారా సౌకర్యాయ్డులు ఎం. కార్యాలుడు. బాకా ఓ సారాథపెళ్ళా గాడుల్ గారుల్లో కాపాలా శాసాలుకు రార్ కారాణాడారుగు

ాశా సిగినిలో నెడుగు గారుగు గారుగు గ్రామంత్రికి సంగారి సంగారి సంగారి సంగారి సంగారి సంగారి సంగారి సంగారి సంగారి స రాగా సంగారి స్రామంత్రి సంగారి స్రూపించిన సంగారి సంగారి సంగారి స్రామంత్రి స్రామంత్రి స్రామంత్రి సంగా సారాగా గ్రామంత్రి సినిమా సంగారి స్రూపించిన సంగారి స్రామంత్రి స్రామంత్రి సారాగా రోడు సంగారి స్రామంత్రి సార్థి సంగారి సంగారి సంగారి సంగారి స్రామంత్రి సారాధులు

Lise on position of the eleminy solution will be to using the

- A Company () and the company of t
- $(\mathbf{x}_{1}, \mathbf{x}_{2}, \mathbf{x}_{3}) = 35.5 \mathbf{x}_{1} = \mathbf{x}_{1} + \mathbf{x}_{2} + \mathbf{x}_{3} + \mathbf{x}$
- తె. కళశావాను ఉండారికి (జీ. సాధానా కాషు)ని కెండాను. కళ్ళలు కారారు అంజుకూడా – గా పెంటా ఉర్దేవి కాళాలు మూరాళు అడ్టానాలు పేరారు. (ఎ. నాలాలి.)
- Realistic velocità de la calente (sibilizza calendare de la calen

ాయుత్తింది. ఇవిస్ట్రాలి సిఫిటిడింగి సెఫిట్ జన్నింది సిఫిట్ జన్నింది చెరికి సిని సాహాజెఫ్టర్ లో కోహిందిను సంతర్భు సిఫిట్ ఫ్రార్స్ స్ఫాట్లో సాట్లి స్ఫాట్ ఫ్రార్స్ స్ కాంగా క్రింగ్ జాల్లో జాల్లో ఉంది ప్రాగా ఎఫాగా ఫ్రార్ సంగారాన్ని సిఫిట్ స్ట్రింగ్ స్

ంగారు సహించించిని ఉన్నాడి విజయానికి సహిస్తుంది. కుర్యానికి ఆరోగాలు అలాకి సహిక్షణం కోడిం కిరణ్జులుకోల్లు దేశియిందికోపరుకు సౌకర్యంలో రాజ ప్రాటిక్ట్ర కిరిమారి నిజి మాత్యానికోడుకు చిజ్ ముంది నిజాలు

・ 「「いいします」と、おおいとしまします。 おうしょうべい ひゃうそうれん しゃう ういし しゃれんた いためい おち かたからからい よう うんかっ つ し し しょう からう かう いっく なう うっぱん かけ かんあったひとつ ひっ こう うから たか そうつう。 ようえ しょう ペン

- 2. "No oil or petroleum products shall be discharged to the lake or onsite absorption field."
- 3. "On those occasions when spent chemical cleaning solutions are to be discharged to the absorption field, samples of the sump waste water shall be collected and analyzed for all chemical species (including heavy metals and hydrocarbons) that potentially could result from the cleaning operation."

We request that we be temporarily allowed to exceed these limitations for the following reasons:

- 1. Although the cleaning solution will be alkaline (expected pH of about 11.5) the large volumes of rinse water and lower pH water already in the absorption field is expected to reduce the pH of the mixture to less than 9.0 at the time of discharge into the ground. Thus, we believe it would be unwise to add approximately 10,000 pounds of neutralizing chemicals -- sulfuric or hydrochloric acid -- to reduce the pH of the cleaning mixture to 9.0 prior to pumpout at the turbine room sump as this would unnecessarily increase the overall amounts of chemicals discharged to the environs without a corresponding benefit thereto.
- 2. The cleaning solution will remove any coatings or preservatives on the internals of the system piping and/or heat transfer surfaces. This is required in preparing the secondary cycle for initial operation. We expect that any hydrocarbons removed by the operation would be of the order of a few gallons in an emulsified form and essentially undetectable.
- 3. Since the cleaning operation is essentially a hot detergent flush using a solution containing no heavy metal inhibitors or other compounds in a system fabricated almost entirely of iron and copper, we believe that analyzing for heavy metals (other than iron and copper) is not required.

j.

- 3. More the operations that a car more a car is coluction are to be attracted to the line of a sited , there to be attracted to the line of a sited , there is a carbon water and the control of here to a control and the creation of the presention of the recent to the creating of the presention of the recent to the creating of the control operation.

A HE CHICK FOR CLE AND SUBSTITION WELL HE SULFED TO (a) and the source of the source of second to a record to rector of the source of the second to a the source so form the source of the second to a the source so form the source of the second to a the source so form the source of the second to a the source of the source of the second to a source of the source of the source of the second to a source of the the source of the source o

When others a start of setting a which which a start of a setting of the start of t

Singe the plentue operation is ease (it is in a second to prove the second to the second totte to the second to th

Mr. B. C. Rusche

March 16, 1977

A similar request to the Michigan Water Resources Commission was made by letter dated December 7, 1976 for approval to discharge the cleaning solution and rinse waters to the ground, through the absorption field, without holdup for neutralization as planned. The Michigan Department of Natural Resources, Water Quality Division, by letter of January 13, 1977 did grant approval of this request. Copies of these two letters are attached for your information as Attachment B and C, respectively.

A supplement to Table 2.2-1 is provided as Attachment D for your information and inclusion in the Environmental Technical Specifications.

We propose that the change would expire at the time of Unit 2 initial criticality and would not change the intent of the specification, which will still ensure that the discharges to the absorption field are not adversely affecting the quality of the groundwater outside of the immediate vicinity of the field.

Our schedule presently calls for this cleaning operation to begin in the last week in April 1977 and we therefore request your prompt review and approval of this proposed change.

Very truly yours,

Vice Presidé

JT:mam Attachment

cc: Sworn and subscribed to before me this /7[±] day of March 1977 in New York County, New York

1100

Notary Public

DAVID G. HUME NOTARY PUBLIC, State of New York No. 31-4608113 Qualified in New York County Commission Expires March 30, 1979

cc: see next page

A set of the set of the state of the state of the set of the set

State Set Set and Charles of Charles 2.2 million and a list state reader when the set of the set of the set of the state of the set of the set of the Set Set of

e Looko bar en contra sed and no montra and ha in the second of the second second in the distribute of the test of the second the second se the second secon

A REAL AS A REAL AS A REAL

- Son and state field and the Son and state of the state of the

n Nation Nation

eral verskere sanssastike en han orde en tak elke kalender så// ba er kovis domater, der i si

> n na sana ang sana a Sana ang san Sana ang san Sana ang san

> >) 2 1 1 1 M Of A

- cc: G. Charnoff
 - R. C. Callen
 - P. W. Steketee
 - R. Walsh

.

- R. J. Vollen
- R. W. Jurgensen Bridgman
- R. S. Hunter

Attachment A

The maximum annual discharges of phosphate and morpholine permitted in the Specification correspond to normal operation 95% of the time of operation and operation at the maximum phosphate content and blowdown rate for 5% of the time. The morpholine concentration is expected to be maintained at 20 ppm in the blowdown at all times. Hydrazine will be added to the steam system as an oxygen-scavenging corrosion inhibitor. At the elevated operating temperature any of this chemical that has not reacted with oxygen will decompose to nitrogen and ammonia. The maximum annual discharge permitted in the specification is that corresponding to normal operation (0.02 ppm hydrazine) for 99% of the time of operation and the maximum concentration (96 ppm) for a maximum of 1% of the operating time for times just before and after shutdown. It is assumed the plant will operate 80% of the time in calculating maximum permitted releases.

• Maximum discharge concentrations are calculated on the basis of a circulating water discharge rate that is the mean of those for Unit 1 and . Unit 2.

No other plant corrosion or deposit inhibitors will be discharged to the plant environs.

2.2.3 OTHER CHEMICAL DISCHARGES

2.2.3.1 Objective

The purpose of this specification is to control or limit the release of chemicals, other than corrosion and deposit inhibitors, to the lake or the onsite absorption field to preclude or minimize potentially adverse impacts on aquatic or terrestrial biota due to plant operation.

2.2.3.2 Specification

The maximum quantities and discharge concentrations of other chemicals used in the plant which will be discharged to the lake and to the onsite absorption field shall be limited to the values specified in Table 2.2.1. Chemicals used in the plant shall be diluted and neutralized as required to give a pH in the range of 5.5 to 9 prior to discharge to the onsite absorption field. Excepting chlorine, no toxic chemical, e.g., chromates, mercury compounds, etc.. shall be discharged to the lake or onsite absorption field. No oil or petroleum products shall be discharged to the lake or to the onsite absorption field. The composition and quantity of detergents (Table 2.2-1) used and discharged to the lake shall be reported in the annual Operating Reports.

On those occasions when spent chemical cleaning solutions are to be discharged to the absorption field, samples of the sump waste water shall be collected and analyzed for all chemical species (including heavy metals

Note: For the one time chemical cleaning of the Unit 2 Condensate and Feedwater Systems, to be completed by the time of Unit 2 initial criticality, the following exceptions to Specification 2.2.3.2 apply: Neutralization of cleaning solution prior to discharge to the absorption field is not required, small quantities of hydrocarbon coatings or preservatives may be discharged with the cleaning solution flush, of the order of a few gallons, and sampling for heavy metals, other than iron and copper, are not required. Attachment B

Robert Courchaine, Chief Engineer Michigan Water Resources Commission Stevens T. Mason Building Lansing, Michigan 48926

SUBJECT:

Donald C. Cook Nuclear Plant Bridgman, Michigan Preoperational Cleaning of Unit 2 Condensate and Feedwater System

Dear Mr. Courchaine:

On July 10, 1974 the Michigan Water Resources Commission issued a permit to the Indiana & Michigan Power Company to dispose of various liquid effluents to the ground at the site of the Company's Donald C. Cook Nuclear Plant in Bridgman, Michigan (Permit M00064). This permit requires, among other things, that the Company "...obtain prior approval of the Chief Engineer of the Commission before discharging spent cleaning solvents or other chemical wastes, other than spent regenerants, to the ground" (permit "Special Condition" I, page 3).

As part of the startup operations for Unit 2 of the Donald C. Cook Nuclear Plant it will be necessary to perform a hot detergent cleaning of the Unit 2 condensate and feedwater systems. The cleaning is a one-time preoperational hot water flush with a mild alkaline solution to remove material left in the piping internals during construction and is expected to take place during the first quarter of 1977. A similar operation was performed on Unit 1 from July 16 through 20, 1973 prior to its startup.

The specific objectives of the preoperational cleaning are:

- 1. To loosen and remove debris not removed by prior water flushing.
- 2. To remove from the system piping any oily materials and any rust preventatives applied during construction.
- 3. To form a protective oxide coating on the carbon steel portions of the system.

, e_{to} _____

•

• • •

ана стан Полония Поло

.

,

. .

> -'...,

.

Robert Courchaine, Chief Engineer December 7, 1976 Page two

The cleaning will be done by circulating approximately 300,000 gallons of a 180-190°F. solution of tri- and di-sodium phosphate throughout the system for approximately 12-24 hours and then flushing to the sbsorption pond with approximately 600,000 gallons of clean water.

The composition of the cleaning solution will be as follows:

- a. 3500 ppm Tri-Sodium Phosphate (Na₃PO₄), Approx. 8750 pounds;
- b. 1500 ppm Di-Sodium Phosphate (Na₂HPO₄), Approx. 3750 pounds;
- c. 300 ppm Surfactant, Approx 750 pounds; and
- d. 200 ppm Anti-foaming agent, Approx. 500 pounds.

The cleaning solution and the rinse water will be drained from the condensate and feedwater systems to the turbine room sump and then will be pumped to the absorption pond. Although the cleaning solution will be highly alkaline (expected pH about 11.5), the large volumes of rinse water and lower pH water already in the absorption pond is expected to reduce the pH of the mixture to less than 9.0 prior to discharge into the ground. Thus, we believe it would be unwise to add the approximately 10,000 pounds of neutralizing chemicals -- sulfuric or hydrochloric acid -necessary to reduce the pH of the cleaning mixture to 9.0 prior to pumpout at the turbine room sump since this would unnecessarily increase the overall amounts of chemicals discharged to the environment.

In accordance with Paragraph I of Water Resources Commission Permit M00064, we request your approval to discharge the cleaning solution and rinse waters to the ground, through the obsorption pond, without holdup for neutralization, as planned.

Very truly yours,

G. E. LeMasters Executive Assistant

bcc: R. W. Jurgensen T. T. F. Plunkett F. T. A. Kreisel J. E. E. Smarella S. J. A. Druckemiller G. R. W. Reeves L.

GEL/sdb

T. A. Miskimen

- F. J. Batchelder.
- J. E. Sherwood
- S. H. Steinhart
- G. W. Pennecke
- L. Storch

· · , ,

X 4 4 5 -V

•

· · · • .

· , * * * * *

¢ ۰ . ۰

•

Attachment C





NATURAL RESOURCES COMMISSION

CARL T. JOHNSON E, M. LAITALA DEAN PRIDGEON HILARY F. SNELL HARRY H. WHITELEY JOAN L. WOLFE CHARLES G. YOUNGLOVE

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926 HOWARD A. TANNER, Director

· January 13, 1977

Mr. G. E. LeMasters Executive Assistant Indiana and Michigan Electric Company 2101 Spy Run Avenue P. O. Box 60 Fort Wayne, Indiana 46801

SUBJECT: Donald C. Cook Nuclear Plant

Dear Mr. LeMasters:

This is in reply to your December 7, 1976, letter regarding preoperational cleaning of Unit 2 Condensate and Feedwater System.

We agree with your assessment that the addition of neutralizing chemicals are not necessary and are hereby granting approval of your request with . the following condition:

Residual free oils must be removed from the turbine room sump prior to the flushing operation.

Feel free to call us if you have questions regarding this matter. We ask that you notify us as to the exact date and times that the cleaning operation will take place, as soon as this has been determined.

Very truly yours,

WATER QUALITY DIVISION

micher.

Robert J. Courchaine Division Chief

RJC/hb cc: W. Denniston C. Harvey



3 E.

4

۹ ۹ ¥ .

1

, *****

4 **`** `

. ų

Attachment D

<u>TABLE - 2.2-1</u> (cont'd)

· ·

^~j

OTHER CHEMICAL DISCHARGES TO THE ENVIRONS

<u>Chemical</u>	Estimated Maximum Annual 	Estimated Maximum Discharge Concentration (ppm)	Use & Estimated Discharge Discharge Frequency To
Tri- and Di- Sodium Phosphate	12,500 lbs.	5,000	On site Used for Pre- Absorption operational chemical Pond cleaning of the Unit No. 2 Con-
· ·			densate and Feed- water Systems
• • •			
•	· ·		
*	•		

. .

.

-1

÷

۰. ۰

, , ,

• • • .