

NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

September 17, 1982

Docket No. 50-373

Philip P. Steptoe, Esquire Isham, Lincoln & Beale Three First National Plaza Chicago, IL 60602

IN RESPONSE REFER TO FOIA-82-328

Dear Mr. Steptoe:

This is in reply to your letter dated July 21, 1982, in which you requested, pursuant to the Freedom of Information Act, copies of all documents relating to the NRC's 1982 investigations of improper construction practices at the LaSalle Plant, including, but not limited to, those allegations submitted to the NRC by the Government Accountability Project of the Institute for Policy Studies, the Illinois Attorney General's Office, and Illinois Friends of the Earth (Mrs. Bridget Little Rorem).

In response to your request, we are providing you with copies of the documents listed on Appendix A. The documents identified with an asterisk on Appendix A have the names and personal identifiers of individuals deleted in order to protect the personal privacy of the individuals or to protect the identity of a confidential source. This information is being withheld from public disclosure pursuant to Exemptions (7)(C) and (D) of the Freedom of Information Act (5 U.S.C. 552(b)(7)(C) and (D)) and 10 CFR 9.5(a)(7)(iii) and (iv).

Pursuant to 10 CFR 9.9 of the Commission's regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The persons responsible for the denial of the portions of documents marked with an asterisk (*) are the undersigned and Mr. James G. Keppler, Regional Administrator, Region III.

This denial may be appealed to the Executive Director for Operations within 30 days from the receipt of this letter. Any such appeal must be in writing, addressed to the Executive Director for Operations, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and should clearly state on the envelope and in the letter that it is an "Appeal from an Initial FOIA Decision."

As you may be aware, it is NRC's policy to place documents subject to FOIA requests in the NRC Public Document Room in Washington, D.C. For consistency and the protection of the personal privacy of individuals

*, AT * . . Philip P. Steptoe, Esquire -2named in those documents, we have removed certain names and personal identifiers from all copies of the documents. You may, therefore, be aware of the identity of some individuals which we have removed. If you wish to discuss the deletions made on any particular document, feel free to contact Mr. John C. Carr at (301)492-8133. The charge for reproducing records not located in the NRC Public Document Room is five cents (\$0.05) per page as specified in 10 CFR 9.14(b). Accordingly, the cost of reproducing the 508 pages provided to you with this letter is \$25.40. You will be billed for this amount by our Division of Accounting. Sincerely. M. Felton, Director Division of Rules and Records Office of Administration Enclosures: As stated

9202190442 920125 9DR ADBCK 07106698 C PDR FCTC:RHO 71-6698

Muclear Assurance Corporation ATTN: Mr. Charles R. Johnson 24 Executive Park West Atlanta, GA 30329

Gentlemen:

Enclosed is Certificate of Compliance No. 6698, Revision No. 15 for the Model No. NFS-4 shipping package.

The certificate has been renewed until December 31, 1982. In this regard, a consolidated application, preferably in the format of Regulatory Guide 7.9, should be submitted at least 30 days before the expiration date of this certificate. Resolution of the issues raised in our letter of December 29, 1981 must also be included in the consolidated application. This will require your continued efforts to resolve outstanding issues.

Note that the certificate places restrictions on the packaging of failed fuel assemblies and fuel rods, requires positive steps to insure that the package is shipped dry, eliminates the use of pipe plugs in drain or vent lines, and extends the cavity inspection frequency from 6 months to one year.

Sincerely,

Original Toposity CHARLES E. MAGESTALD

Charles E. MacDonald, Chief Transportation Certification Branch Division of Fuel Cycle and Material Safety, NMSS

Enclosures:

 Certificate of Compliance No. 6698, Rev. 15

2. Approval Record

cc: See attached list

Registered users: See attached list

111

8202190442

cc: w/encls

Mr. Richard R. Rawl Department of Transportation

Dr. Donald M. Ross Department of Energy

Nuclear Fuel Services, Inc. ATTN: Mr. Larry Wiedemann P.O. Box 124 West Valley, NY 14171 Addressee's: w/encls

Babcock and Wilcox Company ATTN: Mr. D. W. Zeff P.O. Box 800 Lynchburg, VA 24505

Baltimore Gas & Electric Company ATTN: Mr. A. E. Lundvall, Jr. P.O. Box 1475 Baltimore, MD 21203

Battelle Columbus Laboratories ATTN: Mr. Harley L. Toy 505 King Avenue Columbus, OH 43201

Boston Edison Company ATTN: Mr. G. Carl Andognini 800 Boylston Street Boston, MA 02199

Commonwealth Edison
ATTN: Director of Nuclear Licensing
P.O. Box 767
Chicago, IL 60690

Connecticut Yankee Atomic Power Company ATTN: Mr. R. H. Graves R.R. No. 1, P.O. Box 127E East Hampton, CT 06424

Dairyland Power Cooperative ATTN: Mr. R. E. Shimshak P.O. Box 135 Genoa, WI 54632

Department of Energy ATTN: Mr. A. T. Newmann P.O. Box 14100 Las Vegas, NV 89114

Department of Energy ATTN: Mr. James M. Peterson P.O. Box 550 Richland, WA 99352

Duke Power Company ATTN: Mr. W. O. Parker, Jr. 422 South Church Street Charlotte, NC 28242 Ltr dated: JAN 25 1982

Florida Power and Light Company ATTN: Mr. Robert E. Uhrig P.O. Box 529100 Miami, FL 33152

Florida Power Corporation ATTN: Dr. Patsy Y. Baynard P.O. Box 14042 St. Petersburg, FL 33733

General Electric Company ATTN: Mr. D. M. Dawson 175 Curtner Avenue San Jose, CA 95125

Jersey Central Power & Light Company ATTN: Mr. John Sullivan, Jr. P.O. Box 388 Forked River, NJ 08731

Maine Yankee Atomic Power Co. ATTN: Mr. L. H. Heider Turnpike Road (RT 9) Westboro, MA 01581

Northern States Power Company ATTN: Mr. L.O. Mayer 414 Nicollet Mall, 8th Floor Minneapolis, MN 55401

Oak Ridge National Laboratory ATTN: Mr. William E. Terry P.O. Box X Oak Ridge, TN 37830

Reynolds Electric and Engineering Company, Inc. ATTN: Mr. Arden E. Bicker P.O. Box 14400 Las Vegas, NV 89114

Rochester Gas & Electric Corporation ATTN: Mr. L. D. White, Jr. 89 East Avenue Rochester, NY 14649 Southern California Edison Company ATTN: Mr. William H. Seaman P.O. Box 800 Rosemead, CA 91770

Westinghouse Electric Corporation ATTN: Mr. A. J. Nardi P.O. Box 355 Pittsburgh, PA 15230

Wisconsin Electric Power Company ATTN: Mr. Sol Burstein 231 West Michigan Milwaukee, WI 53201

(12-73) 10 CFR 71

CERTIFICATE OF COMPLIANCE

For Radioactive Materials Packages

1.(a) Certificate Number 6698 1.(c) Package Identification 1.(b) Revision No. 1.(d) Pages No. 1.(e) Jotal No. Pages

2. PREAMBLE

- This certificate is issued to satisfy Sections 173.393a, 173.395, and 173.396 of the Department of Transportation Hazardous Materials Regulations (49 CFR 170-189 and 14 CFR 103) and Sections 146-19-10a and 146-19-100 of the Department of Transportation Dangerous Cargoes Regulations (46 CFR 146-149), as amended.
- The packaging and contents described in item 5 below, meets the safety standards set forth in Subpart C of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."
- This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.
- 3. This certificate is issued on the basis of a safety analysis report of the package design or application-

3.(a) Prepared by (Name and address):

3.(b) Title and identification of report or application:

Nuclear Fuel Services, Inc. P.O. Box 124

West Valley, NY 14171

NFS application dated October 6, 1972, as supplemented.

3.(c) Docket No.

71-6698

4. CONDITIONS

This certificate is conditional upon the fulfilling of the requirements of Subpart D of 10 CFR 71, as applicable, and the conditions specified in item 5 below.

- 5. Description of Packaging and Authorized Contents, Model Number, Fissile Class, Other Conditions, and References:
 - (a) Packaging
 - (1) Model No.: NFS-4
 - (2) Description

A steel, lead and water shielded shipping cask. The cask is a right circular cylinder with upper and lower steel encased balsa impact limiters. The overall dimensions are 214 inches in length and 50 inches in diameter. The gross weight of the cask is approximately 50,000 pounds. The inner cavity is 178 inches long and 13.5 inches in diameter. The thickness of the inner shell is 5/16 inch and 1-1/4 inches for the outer shell. The two stainless steel shells are welded to a 2-inch thick stainless steel shield disc at the bottom. The annulus between the inner and outer shells is filled with lead (max. lead thickness 6-5/8 inches, minimum 5 inches).

The lid is stainless steel frustum of cone 7.5 inches thick. The lid is secured to the cavity flange by six, ASTM-A320, Grade L43, 1-1/4 inch diameter bolts. The seal is provided by two polytetrafluoroethylene O-rings. Four neutron shield tanks, each with surge tank and rupture disc, provide a 4-1/2 inch thick (borated) water-ethylene glycol mixture around the outer shell. Four trunnions, two located on either side of the upper or lower impact limiter, are provided. Other cask features include two drain valves located in the bottom shield disc, vent valve, head closure gasket leak check valve, rupture disc-pressure relief valve system located in the cavity flange, fuel canisters for PWR and BWR shipments, and spacers to accommodate shorter fuel assemblies. For transport the cask may be enclosed in an expanded metal cage.

5. (a) Packaging (continued)

(3) Drawings

The NFS-4 shipping cask is constructed in accordance with Nuclear Fuel Services, Inc., Drawing No. E 10080, Sheets 1 through 4, Rev. 19. The fuel assemblies are positioned within the fuel canisters shown in Figure 2.1.3 of the application dated October 6, 1972. Spacers may be used to accommodate shorter fuel assemblies within the fuel canisters.

(b) Contents

(1) Type and form of material

The minimum cooling time of each fuel assembly and rod must be 120 days; and

(i) Irradiated FWR or BWR uranium oxide fuel assemblies with the following maximum active dimensions and maximum compositions prior to irradiation:

Fuel Assembly Data	PWR	BWR
Envelope, in	8.60x8.60x150	5.44×5.44×144
Enrichment, w/o U-235	3.6	3.0
Weight of Uranium, kg	480	197
H/U atomic ratio		5.51

- (ii) Fuel assembly enriched in the U-235 isotope to not more than 2.5 w/o, with active fuel dimensions not to exceed 4.2" x 4.2" x 110" long.
- (iii) Byproduct and special nuclear material in the form of irradiated uranium oxide fuel rods.
- (iv) Solid nonfissile irradiated hardware and neutron source components.
- (v) Fuel assembly enriched in the U-235 isotope to not more than 4.1 w/o, with active fuel dimensions not to exceed 7.8" x 121" long.
- (vi) Byproduct and special nuclear material in the form of irradiated uranium and plutonium oxide fuel rods. Prior to irradiation, the maximum enrichment in U-235 plus plutonium not to exceed 4.0 w/o.
- (vii) Reconstituted PWR uranium oxide fuel assemblies with:

less than the original number of fuel rods,

5. (b) Contents (continued)

- additional fuel rods secured in guide tube thimbles, or
- . combinations of both cases above.

Fuel assembly described above must conform to the maximum active dimensions given in item 5(b)(1)(i).

Any fuel assembly shipped without one or both end fittings must be equipped with an assembly carrier as shown in Battelle Drawing No. 00-001-576 or equivalent.

- (viii) Irradiated BWR uranium oxide fuel assemblies. Prior to irradiation, the maximum enrichment in the U-235 isotope must not exceed 4.0 w/o with active fuel dimensions not to exceed 5.63" x 83.8" long.
- (2) Maximum quantity of material per package.

Not to exceed a decay heat generation of 2.5 kw; and

(i) Item 5(b)(i) above:

One (1) PWR fuel assembly, or Two (2) BWR fuel assemblies; or

(ii) Item 5(b)(1)(ii) above:

Four (4) fuel assemblies contained within the fuel basket shown in NFS Drawing No. 1A-T-1107, Rev. 0; or

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(iii) Item 5(b)(1)(iii) above:

Maximum Enrichment (w/o U-235)		Mass Limit (kg of U-235)
	3.0	2.0
	5.0	1.6 1.5; or

(iv) Item 5(b)(1)(iv) above:

As needed, appropriate component spacers must be used in the cask cavity to limit movement of contents during shipment; or

5. (b) Contents (continued)

(v) Item 5(b)(1)(v) above:

One (1) fuel assembly; or

(vi) Item 5(b)(1)(vi) above:

71:

15.7

1:

Fuel rods within the fuel canisters described in 5(a)(3). The maximum mass of U-235 plus plutonium must not exceed 4.0 kg. A suitable fixture may be used tonsecure the fuel rods within the canister; or

(vii) Item 5(b)(1)(vii) above: /ii.

The maximum compositions of one PWR fuel assembly including additional rods must conform tolsItem 5(b)(1); or

(viii) Item 5(b)(1)(viii) above: /ii

Two (2) BWR fuel assemblies. Prefor to irradiation, the maximum uranium content per assembly must not exceed 122 kg.

(c) Fissile Class

III

Maximum number of packages per shipment ges

One (1)

- 6. The cask cavity must be dry (no free water) when delivered to a carrier for transport. If the package is loaded or unloaded under water or water is introduced into the cavity, residual moisture must be removed from the cask cavity by positioning the cask vertical and with both drain lines open. Air pressure must be applied through the open vent line in such admanner to insure no liquid remains in the cask cavity and drain lines. Alternatively, the cavity must be evacuated until pressure falls below 1" of Hg (0.5 psi) at 80°F and remains there for 15 minutes. Valve off the vacuum line and remove vacuum source. Cavity must maintain a vacuum of at least 1" of Hg for an additional 15 minutes before returning to atmospheric pressure.
- 7. Except for fuel with minor cladding deflects such as pin holes and hairline cracks, failed fuel assemblies and fuel rods must be delivered to a carrier for transport within an inert atmosphere (at atmospheric pressure) in the cask cavity. Drying of the cavity must be accomplished by the alternate procedure (vacuum drying) described in Item 6 above. Failled fuel assemblies (pellets) which are oxidized are not authorized.
- E. The water-ethylene glycol mixture in the neutron shield tanks may contain up to 1.0 weight percent boron. This mixture must not freeze or precipitate in a temperature range from -40°F to 330°F.
- 9. The cask contents must be so limited und€r normal conditions of transport that 27 times the neutron dose rate plus 1.4 times the gamma dose rate will not exceed 1,000 millirems per hour at three (3) feet from the external surface of the package.

- . Page 5 Certificate No. 6698 Revision No. 15 Docket No. 71-6698
 - 10. The vent and drain valves must be 1/2" FG 466TSW Miser ball yalves (Worchester Valve Company, Inc.). The ball of the valve may have a bleed hole to equalize the pressure between the cask cavity and the ball passage in a closed position.
 - 11. In addition to the requirements of Subpart D of 10 CFR Part 71, each package prior to first use must meet the acceptance tests and criteria specified on pages A-21 thru A-34 of the Nuclear Fuel Services, Inc. application dated October 6, 1972, amended, March 1, 1973 and Nuclear Assurance Corporation letter dated November 1, 1974. The results of these tests must be documented and retained for the life of the cask.
 - 12. At periodic intervals not to exceed (3) years, the thermal performance of the cask be analyzed to verify that the cask operation has not degraded below that which is licensed. Following the initial acceptance tests, the heat source may be that provided by the decay heat from the contents of the package provided that the heat source is equal to at least 25% of the design heat load for the package. Each cask that fails to meet the thermal acceptance criteria given on pages A-21(a) and A-21(b) using the TAP computer program, or equivalent, must be withdrawn from service until corrective action can be completed.
 - 13. The rupture discs for the neutron shield tanks must be type "B" or "DV" (BS&B Safety Systems, Inc.) or equivalent.
 - 14. In lieu of the requirements of 10 CFR §71.54(h), the licensee must perform periodic maintenance and testing of 0-rings, drain and vent ball valves, relief valves, and rupture discs of the cask as indicated in the table given below. During inactive periods, the maintenance and testing frequency may be disregarded provided that the package is brought into full compliance prior to the next use of the package.

Cask Component	Period	Test/Action
Ball Valve Ball Valve	Each shipment Annually	Hydro test to 80 psig* Replace seats and seals
O-rings O-rings O-rings	Each shipment Quarterly Annually	Test to 80 psig* Test to 167 psig* Test to 1006 psig*
Inner Containment Vessel	Quarterly	Test to 250 psig*
Cavity Relief Valve	Annually	Test at set point
Cavity Rupture Disc	Annually	Replace
Neutron Shield Tank Rupture Disc	Annually	Replace
Impact Limiters	Annually	Test for leakage

^{*}There must be no visual (pressure gauge) indications of pressure drop for the component under test during a 10-minute test period. Otherwise, corrective action must be taken and the test repeated until such time as the component meets the specified test. (Test to pressures equal to or greater than those indicated.)

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- 15. (a) The containment vessel (cavity) dimension of each cask will be measured prior to the first shipment of irradiated fuel after December 12, 1979, and at intervals not exceeding twelve (12) months thereafter. Should a cask be removed from service, the cavity will be remeasured prior to the next shipment of irradiated fuel if the previous cavity measurements were made more than twelve (12) months prior to the shipment.
 - (b) Cavity measurements will be accomplished using six (6) calibrated guages mounted on a six (6) armed fixture movable over the length of the cavity. The gauges are mounted and oriented such that "radial" measurements may be made at 30°, 90°, 150°, 210°, 270°, and 330° from a 0° point, which is the center of the center valve port. The measurements may then be converted to diameters at azimuthal locations of 30°-210°, 90°-270°, and 150°-330°. Axial locations for cavity measurements to be recorded will be nominal 4! and 12! inches from the top of the cavity and at nominal 6-inch intervals thereafter over the length of the cavity except that the axial interval between the two measurements at the bottom of the cavity shall be approximately 3 inches apart. This will result in "radial" measurements at 29 axial locations for a total of 174 values.

Three consecutive measurements will be considered a cavity measurement set. The measuring equipment will be removed from the cavity and disassembled between each measurement operation to assure as well as possible that measuring equipment and set up variance are incorporated in the results. The true cavity dimensions will be considered the average values from one or two consecutive cavity measurement sets. All measurement that are made of the cask cavity must be included when determing a cavity measurement set (i.e., no measurement may be excluded from the sample).

- (c) The cask will be considered as meeting dimensional requirements when the differer between the maximum diameter at any location in the vessel and the minimum diameter at any location in the vessel is no greater than 0.270 inches and the straightness of the inner surface along the axis at azimuthal locations of 30°, 90°, 150°, 210° 270°, and 330° is within the tolerance specified in Drawing No. E10080 Sheet 1, Rev. 19. The meaning of the straightness tolerance shall be as described in ANSI Y14.5, 1973, "Dimensioning and Tolerancing."
- (d) Any cask which does not meet the criteria stated in paragraph (c) above must be withdrawn from service.
- (e) The cavity measurements and data reduction to arrive at true dimensions will be carried out under an NRC approved Quality Assurance Program (10 CFR §71.51).
- 15. Shipment of an "empty" cask (containing only residual internal radioactive contamination need not meet the requirements of Items 12 and 15 above.

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- 17. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12(b).
- 18. Expiration date: December 31, 1982.

REFERENCES

Nuclear Fuel Services, Inc. application dated October 6, 1972.

Supplements dated: November 9, 1972; January 10 and 22, February 1 and 28, March 1, 14, and 21, May 4, June 4, and July 26, 1973; July 17, 1974; May 4, 1976; and November 9, 1977.

Nuclear Assurance Corporation supplements dated: November 1, 1974; August 13 and December 29, 1975; September 13, 1976; October 20, 1977; May 25, July 18, and September 25, 1978; June 8, July 26, and October 31, 1979; and March 3, July 3, 1980 and December 1, 1980.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Charles E. MacDonald, Chief Transportation Certification Branch Division of Fuel Cycle and Material Safety

JAN 2 5 1932 Date:

U.S. Nuclear Regulatory Commission Transportation Certification Branch Approval Record Model No. NFS-4 Docket No. 71-6698

By application dated October 27, 1980, Nuclear Assurance Corporation requested renewal of Certification of Compliance No. 6698 for the Model No. NFS-4 packaging. Since December 12, 1979 three casks which meet the design approved by the Commission have been authorized with certain restrictions placed on their use. Certificate of Compliance No. 6698 has been under timely renewal in accordance with 10 CFR §2.109 since December 31, 1980.

Certificate of Compliance No. 6698 has been renewed until December 31, 1982. This will provide time to resolve the issues raised in our letter of December 29, 1981 and for a consolidation application to be submitted at least 30 days prior to the expiration date of the Certificate. Issues include resolution of the effect of deviations for casks not constructed to the design approved by the Commission. These casks are not authorized for use.

Conditions to the certificate have been modified or added to take into account recent operating experience. These include a condition to assure that the cask is properly drained and prepared for shipment in the dry state. In addition, vacuum drying and inert atmosphere is required for shipment of failed fuel, shipment of oxidized fuel is not authorized. The use of a pipe plug in the drain line has been deleted. These conditions are to assure that the package has been properly drained and that possible oxidation of fuel during shipment is minimized. Also, the cavity inspection frequency has been extended from 6 months to one year since no adverse changes to the cavity have been detected for the packages in use.

Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and
Material Safety

Date:	JAN	25	1982	
Du ce.				

Hunide (The Copy)

January 28, 1982

MEHORANDUM FOR: Region III Files - LaSalle

FROM:

Robert F. Warnick, Director, Enforcement and Investigation

Staff

SUBJECT:

TELEPHONE CALL FROM DOUG LONGENIE OF CHANEL 5 TV

ALLEGATIONS AT LA SALLE

Doug Longenie called on January 26, 1982 at about 2 p.m. regarding information he had been given while pursuing other news stories. Doug indicated the source of his information was

contact on January 27, 1982, and pave the way for us to contact to get specific details of the following allegations:

- 1. claimed that when they were putting in conduit, the grounding wasn't adequate. They did not do a good job of grinding off the zinc.
- 2. knows where two radiation monitors were supposed to be installed in the off gas building but were not actually installed.
- 3. All of the required heating pads in the off gas building were not installed.
- 4. The ceiling (in the off gas building, I think) was supposed to be 12 inches thick. When they were drilling 8 inch anchor bolts, they penetrated the ceiling and could see sky.
 - 5. The fire alarm system in reactor building No. 1 does not meet specifications. A CAR was issued but it has been written off without the work being done. This problem was also mentioned by a second individual but the second person will not talk to us about it.

8200090242

XAI

DATE POR SIS 115 22 APCIA DECORD CORV

Region III Files - LaSelle

January 28, 1982

6. Dust seals were only postly installed.

I told Longerie we would get in touch with these allegations.

and follow up on

Robert F. Warnick, Director Enforcement and Investigation Staff

cc: A. B. Davis
C. E. Norelius

L. R. Spessard

OFFICE DATE

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confidential source

	Managara and		
	MEMORANDUM FOR:	Region III Files	
	FROM:	James E. Foster, Investigator	
	SUBJECT:	TELEPHONE CONTACT RE LA SALLE ALLEGATIONS Memo of 1/28/82)	(Ref. Warnick
	name to Warnick,	on February 4, 1982, at approximate Dough Longenie, the Channel 5 newsman who had not advised that would be contact was very willing to discuss concerequested confidentiality.	acted by Region
	I discussed each following inform	point enumerated in the Warnick memo, and ation:	developed the
	fication, q pointed out that point coated cond coatings wh 80% of the	unding was not properly done for most LaSa late phase of construction, had read the destioned a QC inspector regarding specific deficiencies, and grounding was properly on. Prior to that time, crews had not clear threads nor adequately ground off the ere grounding straps were attached. estinstalled conduit was not properly grounder on a NEMA requirement).	e grounding speci- cation requirements, performed from aned and copper zinc conduit timated that some
*	being at the line in the that is not sensor show	gas building, there is a location where rand Unit 2 are in close proximity. This we 710 foot elevation, East of AB wall, bet filter building (part of the off-gas building the first alled is for Unit 2. I feels ld be installed now, as the location will attorn difficult after Unit 1 is in operation	as described as ween 14 and 13 ding). The sensor that the Unit 2 be radioactive and
* A2	W/ 820	60102460 PDP	DO NOT DISCLOSE Contains identity of confidential source
DATE 2	sterleg. Warnick)	
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FEB 10 1982 ontains identity of confidential source

- 3. Stated that approximately one month ago, five heating pads were removed from the re-heat cylinders located in the off-gas building. These re-heat cylinders are reached via an entrance on the 710' elevation, and then by going down two elevations. The heating pads were removed to allow some work being performed by fitters, and believes that the pads were not replaced when the area was "closed up".
- 4. Holes drilled for expansion anchors in the ceiling of the off-gas building (725 foot elevation) penetrated the concrete and asphalt roof covering. There was water accumulation on the roof, and water came in via the anchor bolts. There are cracks in the concrete between holes because the holes were drilled too close to each other. This was brought to the attention of from Sargent & Lundy, and some patching was performed.
 - The fire detector modules have been wired without regard to separation criteria. The crews were wiring the detectors from any hanger indiscriminately.
 - 6. Dust protection was not installed on conduits and conduit boxes as specified for dust protection. Some have seal gaskets but no o-rings. observed this during installation of the security system wiring, and the required seals were installed after brought this to the attention of

In addition to the above information (which expands on that provided by Doug Longenie), indicated that was in charge of an area which had nonconformances written on some of the equipment, but the work was not corrected as indicated in the nonconformance report close-out. had the nenconformances approved as completed when the regular inspector

also indicated that some core-drill sheets were found to have information which had been whited-out. (This may be related to the TV-5 story "drilling for dollars" which aired on the 10 o'clock news, February 4, 1982.

stated that Longenie had advised that the story would air that evening.)

James E. Foster Investigator

> DO NOT DISCLOSE Contains identity of confidential source

O NOT DISCLOSE Contains identity of confidential source 1. Marnick

February 26, 1982

KEMORANDUM FOR: Region III Files - LaSalle

THED:

Robert F. Warnick, Director, Enforcement and Investigation

Staff

FROM:

G. A. Phillip, Investigator

SUBJECT:

TELEPHONE CONTACT FROM MRS. JUDITH GOODIE, ATTORNEY.

ILLINOIS ATTORNEY GENERAL'S OFFICE

On February 22, 1982 I was informed that Mrs. Judith Goodie, an attorney in the Illinois Attorney General's office (312-793-2491), had called concerning allegations made by via TV Channel 5 reporter Doug Longenie. Information regarding these allegations is contained in two memoranda to Region III Files, one prepared by R. F. Warnick dated January 28, 1982, and the other prepared by J. E. Foster dated February 10, 1982.

Before speaking with Mrs. Goodie I attempted to obtain additional information regarding the allegations and any action we had taken or planned to take. The following information was obtained, primarily through discussions with Roger Walker, regarding the items listed in the above memoranda.

- Conduit grounding is an industrial safety not a nuclear safety concern and therefore need not be pursued by NRC.
- Since it is not known whether Unit 2 will be built, the NRC cannot force the licensee to take action to install a Unit 2 sensor.
- 3. The absence of the heating pads would become apparent during pre-op testing. This is a radiation safety concern. In all likelihood the licensee has a means of tracking this matter to assure that the pads are replaced. We could with little effort confirm this.
- 4. This matter is not of concern to NRC since this structure is not considered safety related, i.e. subject to seismic considerations.
 - 5. No additional information obtained.
 - 6. No additional information obtained.

*A3

*** Phillip/gg Warnick

DO NOT DISCLOSE

Contains identity of confidential source

Region III Files - aSalle

During a teleptone conversation with Goodie on February 23, 1982, I discussed the above with her and indicated we were evaluating the allegations to decide what action we would take. She indicated she would call Foster or me on March 1 or 2 to find out what we planned to do.

Goodie indicated she had talked with and asked whether had made an allegation during our contacts with regarding the drilling into rebar which said had occurred during the early stages of construction. I indicated that I was unaware of that allegation but that it would be of interest to us.

Following my conversation with Mrs. Goodie I was advised by Walker that the LaSalle Resident Inspector had determined that the heating pad removal was documented on Pre-operational Deficiency No. 402 and they were required to be replaced prior to fuel load.

Regarding Items 5 and 6, Ron Gardner advised that we do not inspect security equipment wiring. I believe it is NRC's position that security equipment must function as required by the licensee's security plan commitments and if they fail compensatory measures must be taken until they are repaired and operational.

On the basis of the above it appears that there is no need to further pursue the matters has brought to our attention. This should be conveyed to and at the same time we should attempt to determine whether has information regarding the drilling into rebar that warrants further action.

Gerald A. Phillip Investigator

cc: R. Walker

J. Creed

R. Gardner

J. Foster

DO_NOT DISCLOSE Contains identity of confidential source

MEMORANDUM FOR:

Region III Files

THRU:

Robert F. Warnick, Director, Enforcement and Investigation

Staff

FROM:

James E. Foster, Investigator

SUBJECT:

ALLEGATION RE REBAR CUTTING AT LA SALLE, DOCKET NO.50-373

(REF. PHILLIP MEMO OF 2/26/82)

On March 6 and 8, 1982, I was contacted by Ms. Judith Goodie, of the Illinois Attorney General's Office. She indicated that she had been in contact with regarding allegations concerning work at the LaSalle site. had to I her that Ms. Goodie indicated had often cut reinforcement bars (rebar) when drilling cores or holes at LaSalle. She also indicated she felt that concerns regarding equipment in the off-gas building should not be dismissed, as some equipment in the building was intended to reduce or mitigate radioactive releases during an accident.

I advised Ms. Goodie that had not made any allegations to me regarding cutting of rebar during our previous conversations, and I would try to recontact I also advised that the off-gas building was a nonsafety, non-siesmic structure, and as such should not contain safetyrelated equipment (NRC definition of safety-related). She indicated she had talked to "nuclear experts" who had advised her differently.

I recontacted at approximately 9:18 p.m. on March 8, 1982. stated that, up until approximately a year and a half ago (September 1980?) hit a rebar during core drilling, a special crew was called. This crew operated a special, water cooled, diamond drill rig, which would cut the rebar. This was referred to as a "wet hole" due to the water cooling, and the utility was billed for the extra work entailed (crew, diamond drill use, laborers to clean up the water).

indicated worked in the reactor building and in the off-gas building, but the problem was "generic" to LaSalle, as other crews also followed the same practice in other areas. stated that a notice ("work notice") was finally put out by Quality Control stopping the uncontrolled cutting.

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Region III Files

-2-

3/14/12

I inquired if any present workers would be able to provide Region III with additional information, and indicated that a may still be onsite, and may be able to provide additional information and locations of cut rebar.

It appears that the allegation can be checked by a review of billing records for core drilling. Those with additional charges for the diamond drill crew should provide locations where reinforcement bars were cut by the drilling. It should also be relatively easy to locate a work notice informing the crews that uncontrolled rebar cutting was to stop.

As the LaSalle plant will be ready for operating license issuance in the near future, I recommend that this issue receive priority attention.

James E. Foster Investigator

cc: L. Spessard

R. Walker

R. Gardner

C. E. Norelius

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confidential source



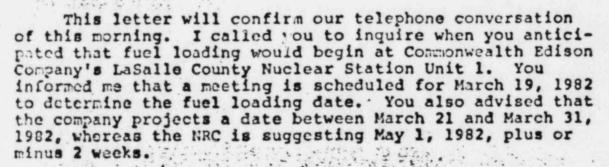
TYRONE C. FAHNER ATTORNEY GENERAL ETATE OF ILLINOIS IN HORTH LA BALLE STREET

783-Slow

March 18, 1982

Mr. Anthony Bournia
Office of Nuclear Reactor Regulation
U.S.Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Bournia:



I informed you that the Illinois Attorney General's Office recently learned that during construction of the LaSalle County Station, it was a common practice in connection with the installation of electrical equipment for holes in the concrete structure to be drilled through concrete reinforcement or "rebar" when rebar was contacted. We believe this practice continued for at least 1 to 2 years.

James Foster at the NRC Region III Office of Inspection and Enforcement, and that he was going to write up a report on his investigation.

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Mr. Anthony Bournia Page 2.

We believe you would want to be aware of our concern regarding any potential safety problem due to the rebar cutting in advance of your meeting with the company. The company is also aware of our concern.

Thank you for your cooperation.

Very truly yours,

JUDITH S. GOODIE

Assistant Attorney General Environmental Control Division

188 West Randolph Street

Suite 2315

Chicago, Illinois 60601 (312) 793-2491

norelius



TYRONE C. FAHNER

ATTORNEY GENERAL
STATE OF ILLINOIS
160 NORTH LA SALLE STREET
CHICAGO 60601

TELEPHONE 793-3500

EXPRESS MAIL

March 24, 1982

Secretary, U.S. Nuclear Regulatory Commission Washington, D.C. 20555

Attention: Chief Docketing and Service Section

Re: Request to Institute A Show Cause Proceeding and for Other Relief Commonwealth Edison Company Docket Nos. 50-373, 50-374

Dear Sir:

Please find enclosed an original and 3 copies of Request To Institute A Show Cause Proceeding and for Other Relief for filing with the Nuclear Regulatory Commission. Please file the original and 2 copies as required by 10 C.F.R. 2.708(d). Please stamp the third copy as "filed" and return it to this office in the enclosed self-addressed stamped envelope.

Very truly yours,

JUDITH S. GOODIE
Assistant Attorney General
Environmental Control Division
188 West Randolph Street
Suite 2315
Chicago, Illinois 60601
(312) 793-2491

JSG:bl Enclosures 870002020222

UNITED STATE OF AMERICA NUCLEAR REGULATORY COMMISSION

In the Matter of

COMMONWEALTH EDISON COMPANY

LaSalle County Nuclear

Generating Station, Unit 1

and Unit 2

Docket Nos. 50-373 and 50-374

REQUEST TO INSTITUTE A SHOW CAUSE PROCEEDING AND FOR OTHER RELIEF

The People of the State of Illinois (Illinois), by

TYRONE C. FAHNER, Attorney General of the State of Illinois,

pursuant to the Atomic Energy Act and 10 C.F.R. §2.206, hereby

requests the United States Nuclear Regulatory Commission (Commission), or the Director of Nuclear Reactor Regulation, to

institute a proceeding pursuant to 10 C.F.R. §2.202, to suspend

operating license proceedings and for other appropriate relief,

in light of newly discovered safety issues.

I. PROCEDURAL BACKGROUND

Commonwealth Edison Company (Edison) has been authorized by Construction Permit Nos. CPPR-99 and CPPR-100 to build the LaSalle

2206070275 PDP

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County, Illinois Nuclear Station consisting of two generating units, Unit 1 and Unit 2. Construction has been ongoing since 1974 or earlier. The construction of Unit 1 is substantially complete. Unit 1 is scheduled for commercial service in September, 1982. Unit 2 is scheduled for completion in October, 1983. Operating license proceedings for Unit 1, Docket No. 50-573, and Unit 2, Docket No. 50-374, are pending before the Commission. Illinois is informed that no hearing has been requested or noticed in said operating license proceedings. Illinois is also informed that Edison has advised the Office of Nuclear Reactor Regulation that it is ready to obtain an operating license for fuel loading and low power testing of Unit 1, pursuant to 10 C.F.R. §2.764(b),(f).*

II. STATEMENT OF FACTS

1. Several of the buildings which comprise LaSalle Station
Units 1 and 2, including the reactor buildings, are physically
connected to each other. In some instances a single building
houses equipment which serves both units. Therefore the construction practices which are the subject of this Request to
Institute a Proceeding (Request), and which are more fully described below, relate to Unit 1 and to Unit 2.

^{*}On March 2, 1982 Robert J. Schultz, a vice president of Edison, stated that Edison expected to load nuclear fuel and to begin low power testing within 30 to 40 days. Ill. Commerce Commission Docket No. 82-0026, report of proceedings, p.370.

- 2. During the installation of electrical conduit and other equipment in Units 1 and 2, as in nuclear power plants in general, thousands of holes were drilled into the reinforced concrete structures of the plant. Reinforced concrete contains numerous reinforcing steel bars which add strength to the concrete structure. The steel is commonly called "rebar." The holes have two general functions. Large holes, up to 8 inches in diameter, and ranging from 1 to 7 feet in depth, were drilled through walls and floors to carry conduit from one room or building to another. Small holes, up to 3/4 inch in diameter and up to 6 inches deep, are used to mount the hardware from which conduit, cable trays and other equipment are suspended on walls and ceilings in the plant. Anchor bolts are inserted into the small holes to support brackets which hold the equipment.
- 3. In February, 1982, it came to the attention of the Office of the Attorney General of Illinois that during the construction of Units 1 and 2, certain practices related to the drilling of holes in the concrete walls, floors and ceilings of the Unit 1 and 2 buildings have created a potentially hazardous condition which, upon the operation of either unit at full power, may be injurious to the public health and safety.
 - A. These practices are generally described as follows. From the beginning of the construction work associated with the installation of electrical

equipment, at least as early as 1978, until the end of 1979, holes in the reinforced concrete walls, floors, and ceilings of the reactor buildings and other buildings were, as a matter of course, drilled through the reinforcing steel or rebar. Depending upon the size of the hole and the thickness of the rebar, this drilling practice may damage or completely sever one or more lengths of rebar, or cut chunks out of the rebar.

- B. The affidavit of a driller who worked at the LaSalle County construction site during the years 1978, 79, and 80, is attached to this Request as Exhibit 1 and is incorporated herein by reference.

 affidavit explains in greater detail the drilling practices alleged herein.
- 4. An unknown number of drilled holes, ranging in the order of thousands, are likely to have been cut through steel reinforcement in the concrete walls of safety related buildings, including the reactor buildings. Although Illinois does not have access to Edison's records which document these drilling practices, it understands from the affidavit of that such records were made at the time the alleged practices occurred.

 These records, or drill sheets, are essential to the Commission's

determination of the extent to which steel reinforcement was damaged or severed in the concrete structure of Units 1 and 2 during construction. The records are believed to be presently in Edison's possession or control. The Commission has access to drill sheets, engineering plans, and other construction records, pursuant to 10 C.F.R. §50.70(a) and 42 U.S.C. §2232(a).

- of drilling through rebar was discontinued, or subjected to the case by case approval of an engineer, some time in late 1979 or early 1980. Illinois has no information which suggests that any engineering approval was ever obtained from Edison's engineering consultants for the rebar cutting which occurred prior to 1980.
- 6. The removal, damaging, or severance of unknown amounts of reinforcing steel in the walls of the reactor buildings and other related structures presents a substantial health and safety issue which requires the immediate attention of the Commission. Attached to this Request as Exhibit 2 is the affidavit of Dale Bridenbaugh, an expert in the field of nuclear plant construction. According to Mr. Bridenbaugh, the practice of cutting through reinforcing steel should be thoroughly

investigated prior to plant operation. He states that if the rebar was damaged or severed without appropriate structural analysis, and if the drilling practice was widespread, "it seems nearly certain that some safety-related structures . . . would have been affected." (Exhibit 2, at 3-4) Mr. Bridenbaugh explains that the potential consequence of degradation in structural quality is the "failure of the structures and/or systems to perform their safety related functions under accident or seismic conditions." (Exhibit 2 at 5) He recommends that any repairs which may be required to remedy structural degradation be made before the safety systems are called upon to prevent or mitigate the consequences of an accident.

A second type of structural deficiency at LaSalle Station has come to the attention of Illinois. The off-gas building is a structure which serves Units 1 and 2. A former construction foreman, whose identity is being kept confidential by the Region III staff, had told Region III that the concrete ceiling or roof of the off-gas building was actually only 8 inches thick even though the specifications called for this roof to be 12 inches thick. Illinois is also informed that a transformer sits atop this roof, and that the concrete has cracked substantially due to the number of anchor bolt holes drilled in it. The

affidavit of Dale Bridenbaugh states that the off-gas building houses equipment containing radioactive gases. (Exhibit 2 at 4) The off-gas building also contains monitoring equipment for measuring radiation levels in the building. The inadequate thickness and cracked concrete of the roof on the off-gas building, the presence of anchor bolt holes which may have been drilled through rebar in the concrete roof, and the presence of a heavy transformer on top of this roof, raise a question of possible damage to the equipment housed in the off-gas building in the event the roof or ceiling should fail.

In view of the substantial health and safety issues 8. presented in this Request and in the affidavits attached hereto, the loading of nuclear fuel into the reactor building of Unit 1 is inadvisable at this time. The affidavit of Dale Bridenbaugh attests to the reasons why fuel loading should be postponed. (Exhibit 2 at 5) The presence of nuclear fuel severely limits the ability of investigating personnel to perform the necessary investigation, by making access to some portions of the plant either extremely difficult or impossible. Until the Commission fully examines the potential safety hazard presented by the cutting of reinforcing steel as alleged herein, it will not be known whether corrective measures will be needed to ensure the structural integrity and safety of Units 1 and 2. The presence of nuclear fuel within the structure of Unit 1 will make more difficult not only the investigation itself, but also the performance

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of any corrective measures which may be ordered by the Commission for Units 1 and 2.

9. Illinois has not previously been a party to any proceeding concerning the licensing of the LaSalle County Nuclear Station. The facts alleged in this Request which create a substantial issue of health and safety were not known to the Requestor Illinois until February, 1982. Thus it is only now that the Attorney General of Illinois finds it necessary to seek the relief requested herein. The continued protection of the health and safety of the People of Illinois requires that the questions raised by this Request be fully resolved before the Commission authorizes the operation, at low power or at full power, of Units 1 and 2.

III. REQUESTED RELIEF

For the reasons set forth above, Illinois requests that the Commission institute a proceeding pursuant to 10 C.F.R. §2.202 and:

1. Immediately suspend consideration of Edison's request for a fuel loading and low power testing license at Unit 1 until the Commission investigates the allegations contained in this Request and decides whether to institute a show cause proceeding.

- 2. Suspend or stay all proceedings concerning Edison's applications for operating licenses for the LaSalle County Nuclear Station Units 1 and 2, including in particular consideration of the granting of authority to begin fuel loading and low power testing, until the Commission investigates the structural integrity of the LaSalle Station and determines the extent to which corrective measures will be required to eliminate any potentially hazardous condition.
- 3. Upon a determination by the Commission in the requested proceeding that corrective measures will be required to eliminate such hazardous condition as may be found, modify the construction permits for Units 1 and 2 accordingly.
- 4. Grant a hearing in the requested proceeding and admit Illinois as a party thereto.
- Order such additional relief as may be appropriate under the circumstances.

In the alternative, if the Commission chooses to consider this Request within the framework of the pending operating license proceedings, the Commission is requested to admit Illinois as a party to such proceedings (Docket Nos. 50-373 and 50-374) and grant a hearing therein limited to the matters raised in this request.

Respectfully submitted,
PEOPLE OF THE STATE OF ILLINOIS

TYRONE C. FARMER Attorney General of Illinois

Of Counsel

PHILIP C. PARENTI Chief, Environmental Control Division JUDITH S. GOODIE Assistant Attorneys General

Environmental Control Division 188 West Randolph Street Suite 2315 Chicago, Illinois 60601 (312) 793-2491

Dated: March 24, 1982

STATE OF ILLINOIS) SS.

AFFIDAVIT

I, being fully sworn and under oath do state:

I reside at Employed as a core driller at the Commonwealth Edison LaSalle County nuclear plant construction site from approximately June, 1978 until July, 1980.

From about June, 1978 until about February 1980 my employer was Commercial Concrete Sawing and Drilling Company. My duties were the drilling of holes in concrete. I drilled holes ranging in diameter from 1/4" to 3/4" with a small hand drilling machine. I also drilled larger holes, ranging in diameter from 1-1/2" to 8", with a large boring machine. Anchor bolts for the small holes were used for hanging conduit, cable trays, and other electrical equipment. The large holes were used to carry conduit through walls and floors.

I performed core drilling in all buildings, at all elevations, throughout the plant site, including the reactor buildings for Units 1 and 2. During most of the year 1979, my partner and I were assigned primarily to the two reactor buildings. We drilled at all elevations in the reactor buildings. During the time of my employment with Commercial Concrete Sawing and Drilling, I received my

illing instructions orally from my foremen, mmercial Concrete employee. My work was observed superintendent employed by the general contractor, Foley Electri-

From the time I began drilling at LaSalle in June, 1978 until al (o. . about February, 1980, it was the usual practice, upon contacting metal reinforcement or rebar during core drilling, to drill through the metal rebar. I was instructed to follow this practice, and to the best of my knowledge, it was the general practice among the other core drillers. Occasionally we were instructed to stop and relocate the holes when metal was contacted. But during most of MCR's? the time period, we cut through the metal.

Small holes were of the following sizes:

V = follo	wing Sizes.	Rep		
oles were of the follo	Depth (inches)	what is depart		
Diameter (inches)	1-1/4	4 4		
1/4 3/8	4 4-1/2	,		
1/2 5/8	6			
3/4		h diameters		

When rebar was contacted in drilling small holes with diameters of 1/2 to 3/4 inches, we changed to the larger "wet drill", which was a boring drill with a carbon bit and a water spray. The wet drill was too large for 1/4 and 3/8 inch holes. When rebar was contacted in drilling these smallest holes, we relocated the holes. My partner and I drilled hundreds of small holes per week. We contacted and

cut through rebar in less than 1/4 of those holes. During the latter part of 1979, each small hole cut through rebar was market with paint or a felt pen. I am unable to estimate the number of with paint or a felt pen. I am unable to estimate the number of rebar cuts more precisely.

Large holes, ranging is diameter from 1-1/2 inch to 8 inches, were all cut with the large boring machine. The depths of the large holes equalled the thicknes of the walls, floors, or ceilings holes equalled the thicknes of the walls, floors, or ceilings holes which the holes were cut, and ranged from about 1 foot to through which the largest immeters, the bits were carbon with diameters. For the largest immeters, the bits were carbon with diamend chips. During my endyment in 1978-79, core drillers were mond chips. During my endyment in was contacted during the instructed to cut throug bar when it was contacted during the drilling of large holes we seldom failed to contact rebar with the large boring machine. My partner and I followed this practice; the large boring machine. My partner and I followed this practice; and to the best of my welledge the other drillers did also. Until the end of 1979, I belt that all of the large holes were drilled by Commercial Concrete loves.

When I worked in reactor buildings for Units 1 and 2 during help through the walls between the two re1979, I drilled large to through the walls between the two reactor buildings, between reactor and the off-gas building, and between the reactor are auxilliary building. Large holes were between the reactor are auxilliary building. Large holes were cut at a rate of aboutoot per hour through concrete. When rebar was contacted and cut took longer.

The locations for holes to be drilled were laid out by employees of Foley Elc. To the best of my knowledge metal

ment for locating the holes. A Quality Assurance inspector inspected my work beginning several months after I started working.

I can recall two specific incidents concerning the drilling of large holes through metal rebar. On one occasion I drilled a 6" diameter hole through rebar in the reactor building of Unit 1, at an elevation below 710'. It was at a place where all the steel tied together, and I removed about 25-40 pounds of steel. It took me 2 or 3 days to drill this hole. Instructed me to keep drilling this hole, and he added, "If you can't do it, we'll get someone who can."

On a second occasion I drilled a 7" diameter hole in the reactor building of Unit 1 at elevation 735. I hit the 2" rebar, and
as I continued to drill the rebar was splitting. I asked
and if I could relocate the hole. said, "No." That
hole was drilled to a depth of 5 to 7 feet, where we hit a beam in
the floor of a room where steam pipes were located. This hole was
later grouted in, because it was improperly located.

We filled out a written report, or drill sheet, on each hole we drilled for both small and large holes. The reports showed the location, depth, and diameter of each hole. They also showed whether rebar was contacted or cut.

From November 1979 to February 1980 I was out on sick leave.
When I returned to the site in February 1980 I worked as a core
driller for Foley Electrical Co. until July 1980. During this time
period the procedures for contacting rebar were changed. We were
instructed to relocate small holes when rebar was contacted, and
we were only allowed to cut through the rebar if approval was given
by an engineer. Written reports were also made of each hole drilled
during this time period. I stopped working at the LaSalle plant as
of July 31, 1980, because of an injury.



SUBSCRIBED AND SWORN TO BEFORE ME THIS DAY 1982.

Notary Public

STATE OF CALIFORNIA

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COUNTY OF SANTA CLARA

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DALE G. BRIDENBAUGH, being duly sworn, deposes and says as follows:

1. I am a Professional Nuclear Engineer, technical consultant, and a founder and president of MHB Technical 8 Associates, technical consultants on energy and environment, with offices at 1723 Hamilton Avenue, Suite K, San Jose, 10 California. I have participated as an expert witness in 11 13: licensing proceedings before the U.S. Nuclear Regulatory Commission (NRC); have served as a consultant to the NRC; have testified at the request of the Advisory Committee on 14 Reactor Safeguards; have appeared before various committees 15 of the U.S. Congress and testified in various state licensing 16 17.1 and regulatory proceedings. 18

2. I am a graduate engineer thoroughly familiar with the design, construction, and operation of nuclear generating plants, including operational errors, equipment and system failures, and other problems that could lead to adverse safety and reliability consequences. I received a B.S. in Mechanical Engineering from the South Dakota School of Mines and Technology in 1953, and have since been registered in the state of California as a Professional Nuclear Engineer. Further details 26

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- 1 of my experience and qualifications are contained in my resume, 2 Attachment 1.
- 3. The purpose of this Affidavit is to identify my 4 concerns regarding the adequacy and quality of construction 5 of certain structures which make up an essential portion of 6 Commonwealth Edison Company's LaSalle Nuclear Plant. I have 7 reviewed the Affidavit of which describes Si numerous cases of anchor bolt hole drilling and conduit passageway core drilling in the LaSalle Units 1 and 2 reactor 10 buildings during the period of June, 1978 through July, 1980. Affidavit, such drilling 11 If, as is reported in 12 was conducted so that reinforcing steel in concrete walls was 13! damaged and/or completely severed without the benefit of 14 appropriate structural analysis, this would appear to me to 15 be a condition with potential safety significance and one that 16 should be thoroughly investigated at LaSalle prior to plant 17 operation.
- 4. I have no way of knowing whether the reported practice
 has in fact jeopardized safety-related structures as I do not
 have access to the exact locations of the holes that were drilled
 Affidavit, however, indicates that such drilling
 practices were "usual" with the associated implication that the
 practice was in common use by a large number of electrical crews
 working throughout the plant. If the practice was widespread
 and used by all drillers during this time period, it seems nearly
 certain that some safety-related structures those associated.

1 with systems or components assuring the integrity of the 2 reactor coolant pressure boundary or those necessary to 3; maintain the capability to shut down the reactor and maintain. 4 it in a safe shutdown condition, or those needed to prevent 5 or mitigate the consequences of accidents which could result 6: in potential off-site exposures) would have been affected. 7 If so, the associated damage or degradation of safety margins of safety-related structures would appear to have violated 9! the quality requirements imposed by the U.S. Code of Federal 10 Regulation, 10 CFR Part 50, Appendix A, General Design Criteria for Nuclear Power Plants and Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants. 13 It is also possible, if the practice was widespread to the 14! extent that it also was used in the attachment of components and equipment to the primary containment structure, that the 16 | integrity of that structure could be affected. The LaSalle Nuclear Plant configuration includes a Mark II concrete 18 containment structure designed to contain and mitigate the consequences of design-basis accidents that could occur during the operation of the plant. The U.S. NRC reviews the 2011 adequacy of this containment to assure its compliance with federal regulations. Standard Review Plan 3.8.1, Concrete Containment, discusses the points normally covered by the NRC in such review. The impact of the drilling operations Affidavit would be relevant described in 26 to the review conducted in accordance with Part II.6,

- 3 -

1 Page 3.8.1-14, which covers materials, quality control, and 2 special construction techniques of concrete containment.

The concepts expressed in this Review Plan applying to conce the containment would also apply to the structural integrity of the other concrete safety-related walls and structures.

5. I have been informed that some of the facts contain Affidavit have been verbally communicated 8 to the U.S. Nuclear Regulatory Commission as called for in 9 10 CFR Part 21 (U.S. Code of Federal Regulations), but that 10 investigation has yet been reported. I have also been info 11 that the U.S. NRC has been verbally informed (by an unident 12 employee) that the concrete roof slab making up the ceiling 13 the LaSalle off gas building is below specified thickness a 14 contains numerous holes and cracks. I have further been 15 informed that the NRC's response to the report of this 16 condition was that no investigation of this condition was warranted. While it is not likely that failure of the off gas building roof would result in a "calamitous" accident, it does contain equipment and components handling radioact: 20 gases. The primary significance, however, of the reported failure to investigate this condition by the NRC is the question that it raises as to the efficacy of the entire quality oversight function conducted by the NRC on the overall construction of the LaSalle Plant. This question 25] makes more urgent the necessity to resolve the reported

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deficiencies that may exist in the reactor building (and other structures).

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- 6. Prompt action to investigate these concerns is important. It is my understanding that the LaSalle Unit 1 5 Operating License is about to be issued which would permit 6 the loading of fuel into the reactor and initial operations 7 to begin. While fuel loading in itself is not likely to change the loading conditions of the potentially affected structures 9 so that a failure would be expected, fuel loading does 10 represent a point in time that is of significance in the 11 proper conduct of the investigation that may be required. 12 When fuel loading occurs and low power operation is possible, 13 access to certain areas of the plant, including portions of 14 primary containment and reactor building must be controlled and/or minimized and the free movement from compartment to compartment by investigatory personnel could be restricted. 17 Subsequent power operation of the reactor could make physical 15 access to some portions of the facility impossible or at least extremely limited. 19
 - 7. The consequences of the degradation of the structural quality potentially represented by the severance of reinforcing steel in the concrete walls is the potential failure of the structures and/or systems to perform their safety related 22 functions under accident or seismic conditions. In my opinion it is essential that a thorough investigation be made by the appropriate authorities of the allegations raised. This woul 24 25 26

1	assure that damage to the essential structures, if it in fact
2	exists, has been properly analyzed by appropriate technical
3	experts and repairs or modifications are made if needed before
4	these safety systems are called upon to prevent or mitigate
5	the consequences of an accident.
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7	10-01.000
8	Malot Miderley
9	Dale G. Bridenbaugh
10	March 17, 1982
11	Subscribed and sworn to before
12	me this 17 day of MARCH, 1982.
13	1 9 11
14	James O. Jehman OFFICIAL STAL
15	NOTARY PUBLIC
16	Commission expires: 8/21/8/
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DALE G. BRIDENBAUGH 1723 Hamilton Avenue Suite K San Jose, CA 95125 (408) 256-2716

EXPERIENCE:

1976 - PRESENT

President - MMB Technical Associates, San Jose, California. Co-founder and partner of technical consulting firm. Specialists in energy consulting to governmental and other groups interested in evaluation of nuclear plant safety and licensing. Consultant in this capacity to state agencies in California, New York, Illinois, New Jersey, Pennsylvania, Oklahoma and Minnesota and to the Norwegian Nuclear Power Committee, Swedish Nuclear Inspectorate, and various other organizations and environmental groups. Performed extensive safety analysis for Swedish Energy Commission and contributed to the Union of Concerned Scientist's Review of WASH-1400. Consultant to the U.S. NRC - LVR Safety Improvement Program, performed Cost Analysis of Spent Fuel Disposal for the Natural Resources Defense Council, and contributed to the Department of Energy LWR Safety Improvement Program for Sandia Laboratories. Served as expert witness in NRC and state utility commission hearings.

1976 - (FEBRUARY - AUGUST)

Consultant, Project Survival, Palo Alto, California.

Volunteer work on Nuclear Safeguards Initiative campaigns in California, Oregon, Washington, Arizona, and Colorado. Numerous presentations on nuclear power and alternative energy options to civic, government, and college groups. Also resource person for public service presentations on radio and television.

1973 - 1976

Manager, Performance Evaluation and Improvement, General Electric Company - Nuclear Energy Division. San Jose, California.

Managed seventeen technical and seven clerical personnel with responsibility for establishment and management of systems to monitor and measure Boiling Water Reactor equipment and system operational performance. Integrated General Electric resources in customer plant modifications, coordinated correction of cause of forced outages and of efforts to improve reliability and performance of 3WR systems.

Responsible for development of Division Master Performance Improvement Plan as well as for numerous Staff special assignments on long-range studies. Was on special assignment for the management of two different ad hoc projects formed to resolve unique technical problems.

2 - 1973

Manager, Product Service, General Electric Company - Nuclear Energy Division, San Jose, California.

Managed group of twenty-one technical and four clerical personnel. Prime responsibility was to direct interface and liaison personnel involved in corrective actions required under contract warranties. Also in charge of refueling and service planning, performance analysis, and service communication functions supporting all completed commercial nuclear power reactors supplied by General Electric, both domestic and overseas (Spain, Germany, Italy, Japan, India, and Switzerland).

1968 - 1972

Manager, Product Service, General Electric Company - Nuclear Energy Division, San Jose, California.

Managed sixteen technical and six clerical personnel with the responsibility for all customer contact, planning and execution of work required after the customer acceptance of departmentor work required after the customer acceptance of department sale supplied plants and/or equipment. This included quotation, sale and delivery of spare and renewal parts. Sales volume of parts increased from \$1,000,000 in 1968 to over \$3,000,000 in 1972.

1966 - 1968

Manager, Complaint and Warranty Service, General Electric Company -Nuclear Energy Division, San Jose, California.

Managed group of six persons with the responsibility for customer contacts, planning and execution of work required after customer acceptance of department-supplied plants and/or equipment--both domestic and overseas.

1963 - 1966

Field Engineering Supervisor, General Electric Company, Installation and Service Engineering Department, Los Angeles, California.

Supervised approximately eight field representatives with responsibility for General Electric steam and gas turbine installation and maintenance work in Southern California, Arizona, and Southern Nevada. During this period was responsible for the installation of eight different central station steam turbine generator units, plus much maintenance activity. Work included customer contact, preparation of quotations, and contract negotiations.

1956 - 1963

Field Engineer, General Electric Company, Installation and Service Engineering Department, Chicago, Illinois.

Supervised installation and maintenance of steam turbines of all sizes. Supervised crews of from ten to more than one hundred men, depending on the job. Worked primarily with large utilities but had significant work with steel, petroleum and other process industries. Had four years of experience at construction, startup, trouble-shooting and refueling of the first large-scale commercial nuclear power unit.

1955 - 1956

Engineering Training Program, General Electric Company, Erie, Pennsylvania, and Schenectady, New York.

Training assignments in plant facilities design and in steam turbine testing at two General Electric Factory locations.

1953 - 1955

United States Army - Ordnance School, Aberdeen, Maryland.

Instructor - Heavy Artillery Repair. Taught classroom and shop disassembly of artillery pieces.

1953

Engineering Training Program, General Electric Company, Evendale, Ohio.

Training assignment with Aircraft Gas Turbine Department.

EDUCATION & AFFILIATIONS:

BSME - 1953, South Dakota School of Mines and Technology, Rapid City, South Dakota, Upper & of class.

Professional Nuclear Engineer - California. Certificate No. 0973.

Member - American Nuclear Society.

Various Company Training Courses during career including Professional Busine Management, Kepner Tregoe Decision Making, Effective Presentation, and numerous technical seminars.

HONORS & AWARDS:

Sigma Tau - Honorary Engineering Fraternity.

General Managers Award, General Electric Company.

PERSONAL DATA:

Born November 20, 1931, Miller, South Dakota.
Married, three children
6'2", 190 lbs., health - excellent
Honorable discharge from United States Army
Hobbies: Skiling, hiking, work with Cub and Boy
Scout Groups.

PUBLICATIONS & TESTIMONY:

- 1. Operating and Maintenance Experience, presented at Twelfth Annual Seminar for Electric Utility Executives, Pebble Beach, California, October 1972, published in General Electric NEDC-10697, December 1972.
- 2. Maintenance and In-Service Inspection, presented at IAEA
 Symposium on Experience From Operating and Fueling of Nuclear
 Power Plants, Bridenbaugh, Lloyd & Turner, Vienna, Austria,
 October, 1973.
- 3. Operating and Maintenance Experience, presented at Thirteenth Annual Seminar for Electric Utility Executives, Pobble Beach, California, November, 1973, published in General Electric NEDO-20222, January. 1974.
- 4. Improving Plant Availability, presented at Thirteenth Annual Seminar for Electric Utility Executives, Pebble Beach, California, November 1973, published in General Electric NEDO-20222, January, 1974.
- 5. Application of Plant Outage Experience to Improve Plant Performance, Bridenbaugh and Burdsall, American Power Conference, Chicago, Illinois, April 14, 1974.
- 6. Nuclear Valve Testing Cuts Cost, Time, Electrical World, October, 15, 1974.
- 7. The Risks of Nuclear Power Reactors: A Review of the NRC Reactor Safety Study WASH-1400, Kendall, Hubbard, Minor & Bridenbaugh, et al, for the Union of Concerned Scientists, August, 1977.

- 8. Swedish Reactor Safety Study: Barseback Risk Assessment,
 MHB Technical Associates, January, 1978. (Published by the
 Swedish Department of Industry as Document DsI 1978:1)
- 9. Testimony of D.G. Bridenbaugh, R.B. Hubbard, G.C. Minor to the California State Assembly Committee on Resources, Land Use, and Energy, March 8, 1976.
- 10. Testimony of D.G. Bridenbaugh, R.B. Hubbard, and G.C. Minor before the United States Congress, Joint Committee on Atomic Energy, February 18, 1976, Washington, DC (Published by the Union of Concerned Scientists, Cambridge, Massachusetts.)
- 11. Testimony by D.G. Bridenbaugh before the California Energy Commission, entitled, Initiation of Catastrophic Accidents at Diablo Canyon, Hearings on Emergency Planning, Avila Beach, California, November 4, 1976.
- 12. Testimony by D.G. Bridenbaugh before the U.S. Nuclear Regulatory Commission, subject: Diablo Canyon Nuclear Plant Performance, Atomic Safety and Licensing Board Hearings, December, 1976.
- 13. Testimony by D.G. Bridenbaugh before the California Energy Commission, subject: Interim Spent Fuel Storage Considerations, March 10, 1977.
- 14. Testimony by D.G. Bridenbaugh before the New York State Public Service Commission Siting Board Hearings concerning the James-port Nuclear Power Station, subject: Effect of Technical and Safety Deficiencies on Nuclear Plant Cost and Reliability,
- 15. Testimony by D.G. Bridenbaugh before the California State

 Energy Commission, subject: Decommissioning of Pressurized

 Water Reactors, Sundesert Nuclear Plant Hearings, June 9,
- 16. Testimony by D.G. Bridenbaugh before the California State Energy Commission, subject: Economic Relationships of Decommissioning, Sundesert Nuclear Plant, for the Natural Resources Defense Council, July 15, 1977.
- 17. Testimony by D.G. Bridenbaugh before the Vermont State Board of Health, subject: Operation of Vermont Yankee Nuclear Plant and Its Impact on Public Health and Safety, October 6, 1977.
- 18. Testimony by D.G. Bridenbaugh before the U.S. Nuclear Regulatory Commission, Atomic Safety and Licensing Board, subject tory Commission, Atomic Safety and Licensing Board, subject Deficiencies in Safety Evaluation of Non-Seismic Issues, Lack of a Definitive Finding of Safety, Diablo Canyon Nuclear Units October 18, 1977, Avila Beach, California.

- 19. Testimony by D.G. Bridenbaugh before the Morwegian Commission on Nuclear Power, subject: Reactor Safety/Risk. October 26, 1977.
- 20. Testimony by D.G. Bridenbaugh before the Louisiana State Legislature Committee on Natural Resources, subject: Nuclear Power Plant Deficiencies Impacting on Safety & Reliability, Baton Rouge, Louisiana, February 13, 1978.
- 21. Spent Fuel Disposal Costs, report prepared by D.G. Bridenbaugh for the Natural Resources Defense Council (NRDC), August 31, 1978.
- 22. Testimony by D.G. Bridenbaugh, G.C. Minor, and R.B. Hubbard before the Atomic Safety and Licensing Board, in the matter of the Black Fox Nuclear Power Station Construction Permit Hearings, September 25, 1978, Tulsa, Oklahoma.
- 23. Testimony of D.G. Bridenbaugh and R.B. Hubbard before the Louisiana Public Service Commission, Nuclear Plant and Power Generation Costs, November 19, 1978, Baton Rouge, Louisiana.
- 24. Testimony by D.G. Bridenbaugh before the City Council and Electric Utility Commission of Austin, Texas, Design, Construction, and Operating Experience of Nuclear Generating Facilities, December 5, 1978, Austin, Texas.
- 25. Testimony by D.G. Bridenbaugh for the Commonwealth of Massachusetts, Department of Public Utilities, Impact of Unresolved Safety Issues, Generic Deficiencies, and Three Mile Island-Initiated Modifications on Power Generation Cost at the Proposed Pilgrim-2 Nuclear Plant, June 8, 1979.
- 26. Improving the Safety of LWR Power Plants, MH3 Technical Associates, prepared for U.S. Dept. of Energy, Sandia Laboratories, September 28, 1979.
- 27. BWR Pipe and Nozzle Cracks, MHB Technical Associates, for the Swedish Nuclear Power Inspectorate (SKI), October, 1979.
- 28. Testimony of D.G. Bridenbaugh and G.C. Minor before the Atomic Safety and Licensing Board, in the matter of Sacramento Municipal Utility District, Rancho Seco Nuclear Generating Station following TMI-2 accident, subject:

 Operator Training and Human Factors Engineering, for the California Energy Commission, February 11, 1980.
- 29. Italian Reactor Safety Study: Caorso Risk Assessment, MH3 Technical Associates, for Friends of the Earth, Italy, March, 1980.
- 30. Decontamination of Krypton-85 from Three Mile Island Nuclear Plant, H. Kendall, R. Pollard, & D.G. Bridenbaugh, et al, The Union of Concerned Scientists, delivered to the Governor of Pennsylvania, May 15, 1980.

- Decontamination of Krypton-85 from Three Mile Island Nuclear Plant, H. Kendall, R. Pollard, & D.G. Bridenbaugh, et al, The Union of Concerned Scientists, delivered to the Governor of Pennsylvania, May 15, 1980. Testimony by D.G. Bridenbaugh before the New Jersey Board of 32.
 - Public Utilities, on behalf of New Jersey Public Advocate's Office, Division of Rate Counsel, Analysis of 1979 Salem-1 Refueling Outage, August, 1980.
 - Minnesota Nuclear Plants Gaseous Emissions Study, MHB Technical Associates, for Minnesota Pollution Control Agency, September, 33. 1980.
 - Position Statement, Proposed Rulemaking on the Storage and Disposal of Nuclear Waste, Joint Cross-Statement of Position 34. of the New England Coalition on Nuclear Pollution and the Natural Resources Defense Council, September, 1980.
 - Testimony by D.G. Bridenbaugh and Gregory C. Minor, before the New York State Public Service Commission, In the Matter 35. of Long Island Lighting Company Temporary Rate Case, prepared for the Shoreham Opponents Coalition, September 22, 1980, Shoreham Nuclear Plant Construction Schedule.
 - Supplemental Testimony by D.G. Bridenbaugh before the New Jersey Board of Public Utilities, on behalf of New Jersey 36. Public Advocate's Office, Division of Rate Counsel, Analysis of 1979 Salem-1 Refueling Outage, December, 1980.
 - Testimony by D.G. Bridenbaugh and Gregory C. Minor, before the New Jersey Board of Public Utilities, on behalf of 37. New Jersey Department of the Public Advocate, Division of Rate Counsel, Oyster Creek 1980 Refueling Outage Investigation, February, 1981.
 - 38. Economic Assessment: Ownership Interest in Palo Verde Nuclear Station, MHB Technical Associates, for The City of Riverside, September 11, 1981.
 - Testimony of D.G. Bridenbaugh before the Public Utilities Commission of Ohio, in the matter of the Regulation of the 39. Electric Fuel Component Contained Within the Rate Schedules of the Toledo Edison Company and Related Matters, subject: Davis-Besse Nuclear Power Station 1980-81 Outage Review, October, 1981.
 - Supplemental Testimony of D.G. Bridenbaugh before the Public Utilities Commission of Ohio, in the matter of the Regulation 40. of the Electric Fuel Component Contained within the Rate Schedules of the Toledo Edison Company and Related Matters, subject: Davis-Besse Nuclear Power Station 1980-81 Outage Revi November, 1981.

- 1. Systems Interaction and Single Failure Criterion Phase 2
 Report, MHB Technical Associates for the Swedish January, 1982.

 Power Inspectorate (SKI), January, 1982.
- Testimony of D.G. Bridenbaugh and Gregory C. Minor on behalf of Governor Edmund G. Brown Jr., Sefore the Atomic Safety and Licensing Board, regarding Contention 10, Pressurizer Heaters, January 11, 1982.
- 43. Testimony of D.G. Bridenbaugh and Gregory C. Minor on behalf of Governor Edmund G. Brown, Jr. before the Atomic Safety and Licensing Board, regarding Contention 12, Block and Pilot Operated Relief Valves, January 11, 1982.

1.5 8205

MAR 25, 1982

MEMORANDUM FOR: Charles E. Norelius, Director, Division of Engineering and

Technical Programs

FROM:

Robert F. Warnick, Director, Enforcement and Investigation

Staff

SUBJECT:

ALLEGATION RE REBAR CUTTING AT LA SALLE-DOCKET NO. 50-373;

50-374

The four attached memos document concerns expressed by an alleger and Ms. Judith Goodie of the Illinois Attorney General's office regarding core drilling through rebar.

Because of the high priority of LaSalle and the unavailability of investigators, this matter is being transferred to your Division as we discussed on March 22, 1982.

EIS would appreciate receiving a copy of the documentation of your findings and closeout.

> Robert F. Warnick, Director Enforcement and Investigation Staff

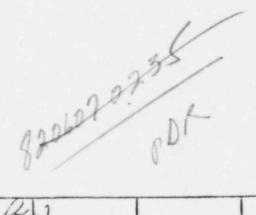
Attachments: As stated

cc w/attachments:

R. L. Spessard

R. Walker

J. Foster



OFFICE)	RIII A	2				
EURNAME .	Warnick/qg.					
DATE						
			OFFICIAL	DECODO	OPV	



UNITED STATES NUCLEAR REGULATORY COMMI REGION III 799 RODSEVELT HUAD GIEN FILYN, ILLINOIS 60137

March 30, 1982

MEMORANDUM FOR: R. C. DeYoung, Director, Office of Inspection and

Enforcement

FROM:

James G. Keppler, Regional Administrator, Region III

SUKIEGT:

LA SALLE COUNTY NUCLEAR STATION - PETITION FROM

ILLINOIS ATTORNEY GENERAL

As you know, on March 24, 1982, the Illinois Attorney General petitioned the NRC to suspend licensing proceedings at La Salle pending investigation of recent allegations and to institute a Show Cause Hearing with Illinois as a party to the Hearing. The allegations deal with the overall adequacy of safety related structures as a result of widespread rebar cutting and specific arractural deficiencies in the roof of the off-ges building.

A conference call was held on March 29 involving Messrs. Deuton, Case, Stello, DeYoung and Koppler to discuss the handling of these investigations. We agreed that, because the petition expresses concern that the off-gas building deficiencies had been verbally communicated earlier to NRC and that the NRC had concluded an investigation of these alleged deficiencies was not warranted, it would be prudent to have an independent review of this allegation by IE (since IE was not involved in the consideration not to investigate). This review should address both the technical adequacy of the off-gas building concerns as wall as the NRC's handling of the earlier notification in this regard. With respect to the concerns associated with cutting through rebar this matter will be reviewed by Region III with technical assistance from NRR.

I realize your staff is already depleted as a result of other investigation assistance you are giving us, and your willingness to assist in this effort is genuinely appreciated.

James G. Koppler

Regional Administrator

cc: .V. Stello, DEDROGR H. H. Denton, NRR



- UNITED STATES NUCLEAR REGULATORY COMMISSION

REGION III 799 ROOSEVELT ROAD GLEN ELLYN, ILLINOIS 60137

EIS File No. 82-05

MER 31 1982

DO NOT DISCLOSE Contains identity of confidential source

MEMORANDUM FOR:

Region III Files

FROM:

James E. Foster, Investigator

THROUGH:

R. W. Warnick, Director, Enforcement and Investigation Staff

SUBJECT:

CONTACT WITH JUDITH GOODIE

I contacted Ms. Judith Goodie, of the Illinois Attorney General's Office, at approximately 9:10 a.m., on March 26, 1982.

I advised Ms, Goodie that Region III had not been aware of allegations by regarding LaSalle, and inquired why the Illinois Attorney General's petition did not mention allegations from

Ms. Goodie stated that she had "assumed" that Region III had gotten name from NBC (as she had) and had contacted She indicated had declined to provide her office with an affidavit for fear of name being known, and so was not included in the submitted petition.

I indicated that the information provided by was much more detailed than that provided by and would have assisted Region III in its review.

Ms. Goodie stated that she had not meant to withhold any information, and that "it should have been obvious that we were working on something".

> James & Foster James E. Foster Investigator

cc: R. L. Spessard

R. Gardner

W. Walker

C. E. Norelius-

8206070258

DO NOT DISCLOSE Contains identity of confidential source