

Building for backup unit at nuclear plant is sinking

By ALLAN SLOAN
Free Press Business Writer

One of the buildings at Consumers Power Co.'s Midland nuclear complex is sinking slowly into the soil, giving the company yet another worry at the problem-plagued site.

The sinking building is designed to house a diesel generator to provide backup power to the \$1.74 billion complex, which is scheduled to be completed in 1982.

According to Consumers, the building has already sunk about three inches, as much settling as the company expected over the 40-year life of the complex.

"All of it is being watched," said Gen Roy, deputy director of the Chicago region of the Nuclear Regulatory Commission. Roy said the NRC, which recently finished an inspection of the site, doesn't know yet if the sinking is anything to worry about.

"I couldn't give you a time estimate on that," said Roy, when asked when the NRC will know whether the sinking is a serious problem.

ROY SAID that NRC staff members attribute the sinking to several factors, among them a 20-foot rise in the local water table caused by filling a pond that will provide cooling water for the nuclear plants.

The diesel generator building, while not as vital as the



Consumer Power Co.'s problem-plagued nuclear complex at Midland

nuclear components of the complex, is an important structure. The diesel generator provides power to run the plant's monitoring system if the nuclear generators aren't operating or if the power that runs the complex itself is cut off for some reason.

Mary Sinclair, a long-time critic of the complex, said the settling problems "may be the end" for the plant, which has been plagued by construction problems, regulatory

changes, cost increases and Consumers' financial problems of construction on the nuclear complex.

THE UTILITY, however, sought to minimize the problem.

Steven Howell, a Consumers senior vice-president, said the rate at which the building is sinking has declined, and the company hopes that the sinking will stop after Consumers puts about 2,000 tons of sand in and around the building.

Howell said the weight of the sand will compact the soil under the building and near it, stopping the sinking.

He said the sinking problem isn't affecting the parts of the complex that house the nuclear generators and steam turbines, because those were built on rock while the diesel generator building was built on fill dirt.

Howell also said that the sinking won't affect the pace

CONSTRUCTION on the complex is more than six years behind schedule, and its cost is \$1.4 billion over the original budget of \$267 million drawn up in 1967, when the project was announced.

Consumers, has had numerous run-ins with the NRC over construction practices at the complex, and other delays were caused when Consumers reduced its predictions of future electric demand in its service area and when the company decided it didn't have enough money to finish the complex on schedule.

The utility is now trying to sell shares of the complex to rural electric co-operatives and city-owned electric companies in a move designed to help raise money and settle suits which the co-ops and cities brought against the company several years ago.

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the backs of pickup trucks. Witnesses said the troops fired into

holy city of Mashhad, in northeastern Iran.

measure," while others have ignored the warnings.

NRC, utility to inspect nuclear plant settling

By STARR EBY
Daily News staff writer

Consumers Power Company officials and representatives of the Nuclear Regulatory Commission (NRC) will meet to discuss the Midland nuclear plant at 1 p.m. Sunday and 9 a.m. Monday.

They will observe and discuss the excessive settling of the plant's diesel generator building at the plant site.

Bechtel Construction Corporation workers first discovered the problem in a Sept. 7 routine check. Construction was halted and the NRC was informed of the problem, according to Consumers' spokesmen.

Measurements taken a week ago show that the building is still settling, although the rate is decreasing.

As of Oct. 27, the building's southeast corner had settled 2.64 inches. A week ago it was down to 3.5 inches, said Bruce Peck, construction supervisor for Consumers.

The north and west sides of the building had settled 1.8 and 2.38 inches, respectively, by Oct. 27 and 2 and 2.5

inches, respectively, at the most recent measurement, he said.

Consumers specifications allowed for no more than a 3-inch settlement even after the installation of four 100-ton diesel generators.

An NRC memorandum from James G. Kepler, director of NRC Region III, cited several factors that could be responsible for the excessive settling.

These are the compressibility of fill dirt used to support the building, the design and foundation of the building, piping underlying part of the building and soil compaction caused by the filling of the cooling pond, which raised the water table 20 feet.

NRC resident inspector Ronald J. Cook explained that the rise in the water table is just within the bounds of the plant, and that it is desirable because it helps the soil firm up.

"There are no leaks in the clay seal. It's just that the seal lines the whole site, causing it to have a different water table than that of the surrounding area," he said.

He explained that there is no danger

of settlement with the reactor building, because it is located on undisturbed soil.

The diesel generator building will house the alternate power needed if a quick shutdown of the reactor must be effected and there is no other power source available from outside the plant.

Kepler's memorandum notes that several other buildings located on the fill material have also settled quite a bit, but Peck said he wasn't aware of any other problems.

He said Consumers officials will discuss what steps they will take to try to stop the settlement.

The company is installing measuring instruments which will monitor the success of a sand-fill program which will begin in about two weeks.

The company plans to put about 2,000 tons of sand in and around the building, which should compress the fill to its maximum compaction.

Operating licensing pre-hearings for the 55 percent completed plant are scheduled to begin Dec. 14 in Midland Circuit Court. At these proceedings, the parties involved will discuss matters which will be examined in the operating licensing hearings, scheduled to begin late next year.

Meanwhile, a federal spokesman said that construction license hearings for the nuclear plant will be reopened.

The hearings, to be conducted by the Atomic Safety and Licensing Board, will be limited to two matters originally discussed in previous hearings in Midland and Chicago, said Clare Miles of the NRC in Washington.

Those matters, she said, include alleged efforts to have information withheld by Consumers prior to the hearing and the environmental effects of radon. Neither should affect construction progress, she said.

Radon is a radioactive chemical element formed in a nuclear reaction.

Snow, but how much?

The National Weather Service has issued a winter storm watch for the Lower Peninsula for Sunday.

A low pressure system that was over the Rockies, dumping snow today on New Mexico, Colorado, Wyoming and Nebraska, is expected to move into Michigan late tonight or early tomorrow, Weather Service officials said today.

The bulk of the snow is expected to fall Sunday. There is no prediction of possible accumulations in the Midland area.

State police at the Paw Paw post said 5 inches of snow Friday night produced several minor accidents, with no injuries reported.

"A lot of minor accident reports, mostly cars that slid into ditches," were coming into the Rockford post in southwestern Michigan, troopers reported. Snowfall was reported at 3 inches.

Lower Peninsula skies generally were overcast with some main roads in slippery condition.

State police in the Upper Peninsula said there were "no problems" Friday and early today as snow fell in many areas.

Snow-covered and slippery roads were reported at Calumet and St. Ignace, troopers said, with a few scattered snow flurries.

The news at a glance

LOCALLY

She was born into a family of Evangelical Church ministers. She graduated from Temple University's School of Medicine. A general physician, she would channel her interests into industrial and public health medicine. She is Dr. Winifred Oyen, director of the Midland City-County Health Department. Profile, page 3.

A Breckenridge farmer has been released from a Portland, Ore., hospital, two weeks after he was injured and his pregnant wife was killed when they

falling to give the government inside information the firms claim could be leaked to competitors. Details, page 2.

WORLDWIDE

Gunmen in San Salvador, El Salvador, have kidnapped two British bankers, the third and fourth kidnappings of foreigners there this year. Details, page 2.

More than 140 refugees from Vietnam, many of them children, drowned or were missing and presumed dead when their boat capsized in rough seas

of Alaskan wilderness from development. By executive order, he has established 17 national monuments on federal land in Alaska. Details, page 9.

OPINIONS

Some political observers see President Carter as ripe for the picking, but it's a long way to election day, and he could be a lot tougher to beat in 1980 than he is given credit for today. An editorial, page 4.

The real tragedy of the Guyana assassinations and mass suicides is that



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 25 1979

Docket Nos: 50-329
50-330

APPLICANT: Consumers Power Company
FACILITY: Midland Plant, Units 1 & 2
SUBJECT: SUMMARY OF APRIL 10-11, 1979 MEETINGS ON OPEN ITEMS REGARDING
FSAR REVIEW

On April 10 and 11, 1979, the NRC staff met in Bethesda, Maryland with representatives of Consumers Power Company, Bechtel Associates, and Babcock and Wilcox to discuss some of the open items associated with the staff's review of the FSAR for Midland Plant, Units 1 & 2. These open items are identified in the staff's letter of March 30, 1979 and served as the agenda for the meeting.

The discussions in Enclosures 3 & 4 for this meeting summary correspond to the same-numbered item by technical review branch as specified in the March 30, 1979 letter.

Meeting attendees for April 10, 1979 and April 11, 1979 are listed in Enclosures 1 & 2, respectively.

A handwritten signature in dark ink that reads "Darl S. Hood".

Darl S. Hood, Project Manager
Light Water Reactors Branch No. 4
Division of Project Management

Enclosures:
As stated

cc: See next page

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ENCLOSURE 1

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APRIL 10, 1979

D. Hood	DPM/NRR
J. S. Boegli	ETSB/NRR
J. J. Zabritski	CPCO
C. Hinson	RAB/NRR/NRC
M. B. Pratt	Bechtel
J. P. Kindinger	CPCO
M. J. Salerno	CPCO
D. A. Sommers	CPCO
K. C. Prasad	Bechtel
L. L. Lucas	Bechtel
J. O. Howard	B&W
J. S. Shively	B&W
R. L. Reed	B&W
K. M. Campe	AAB/NRR
L. Soffer	AAB/NRR
W. Brooks	CPB/DSS/NRR
M. Tokar	CPB/DSS/NRC
D. Pickett	CSB/NRC
C. Tinkler	CSB/NRC
G. C. Millman	NUS Corporation
P. R. Matthews	DSS/ASB
W. LeFave	DSS/ASB

ENCLOSURE 2

ATTENDEES

APRIL 11, 1979

D. Hood	DPM/NRR
A. Hafiz	SEB/DSS
R. Stephens	DSS/MEB
T. Thiry ven Gadam	Consumers Power Co.
J. P. Kindinger	CPCO
B. Dhar	Bechtel
L. Lucas	Bechtel
M. B. Pratt	Bechtel
J. J. Zabritski	CPCO
L. Reiter	NRC/DSE
T. Cardone	NRC/DSE
R. E. Jackson	NRC/DSE
D. M. Gillen	NRC/DSE
R. Gonzales	NRC/DSE/HMB
R. Priebe	NRC/AAB
W. Ross	NRC/RSLB

ENCLOSURE 3
ITEMS DISCUSSED APRIL 10, 1979

Effluent Treatment Systems Branch

- 1., 3., 5. The applicant's proposed response for FSAR Revision 20 will resolve these items.
2. Staff review of the Section 11.5 as revised by FSAR Revision 19 indicated several items which must be clarified or modified. These areas include the footnotes of Table 11.5-1, sheet 2 of Table 11.5-2, footnote 7 of Table 11.5-4, Table 11.5-5, Table 11.5-6 IV, Section 11.5.2.2.7 and Section 11.5.2.3.
4. Unresolved. The staff stated that a design solution such as that implemented by Pilgrim, Unit 2 might also be acceptable in lieu of a design solution based upon ECCS pump room filtration. However, the staff remains firm in its position that a design solution to mitigate pump seal leakage after an accident is required. The applicant indicated the basis for the staff position on Midland is more stringent than that used on Arkansas Nuclear One, Unit 2.

Accident Analysis Branch

1. Unresolved. The applicant has proposed a technical specification for containment integrity during refueling similar to that for Palisades (i.e., the equipment hatch which opens to the auxiliary building may be open during refueling). The analysis for a fuel handling accident would assume the equipment hatch is manually closed within 30 minutes. Further radiological release analyses assuming failure of a full fuel assembly, the open equipment hatch and other flow paths are required to support the applicant's proposed position. The staff also indicated it may not accept the 48-inch purge lines being in operation while fuel handling operations are in progress since these lines would not be isolated until 30 seconds after a radiological release accident.
2. Same as ETSB Item 4.
3. Unresolved. The staff is concerned that frequent testing of turbine stop valves may contribute to damage to steam generator tubes as occurred at Oconee. Followup observations which were to have been conducted at Three Mile Island, Unit 2 have not been submitted. This matter is being reviewed as part of Task Action Plan A-5 of NUREG-0510. Consumers Power expressed the belief that the Oconee tube damage resulted from other causes; the staff

requested Consumers to submit any data it may have in support of that opinion.

4. Unresolved. The staff said that its position requiring testing of toxic gas sensors in place is also an open item. The staff is continuing its review of toxic gas releases via railway.

Radiological Assessment Branch

1. Initial item resolved by Revision 19. An error in Table 12.3-2 will be corrected. The design does not provide for criticality monitoring in the new fuel storage area when handling is not in progress; therefore an exemption to 10 CFR 70.24 will be applied for.
2. The applicant will revise the FSAR to provide more positive access control to the fuel tube area, for recognition of the potential for exposure in the area, and to provide for portable monitoring devices.

Core Performance Branch - Physics

1. Resolved by Revision 19.

Core Performance Branch - Fuel Design

1. To be discussed April 20, 1979.
2. Unresolved. We require the applicant to propose a specific fuel surveillance program for our review. The staff suggested guide tube wear may be plant specific. No fuel surveillance program is described in the FSAR.
3. & 4. Staff review is continuing but no further information is needed from applicant at this time.
5. The staff requires all of Chapter 4 and 15 to be revised to use the approved version of TACO (BAW-10784, Revision 1, August 1977). We also require that TAFFY be shown to be conservative where used in lieu of the approved version of TACO.

Containment Systems Branch

1. The staff referred the applicant to Arkansas Nuclear One, Unit 2 as an example of an acceptable approach.
2. The staff has reviewed the applicant's response to request 022.43 in FSAR Revision 19 and requires that the temperature profile for the worst case therein be provided for equipment qualification purposes.
3. Unresolved. The staff asked the applicant to identify the criteria used to determine that the nodalization model is adequate. The staff emphasized that cases which may be conservative for the loadings on the cavity wall may not necessarily be conservative for the loadings on the vessel. The staff inquired about the horizontal boundary through the nozzle centerlines for the expanded nodalization model. The staff will require that any mechanistic assumptions used for the treatment of insulation on venting or cavity analyses be capable of being demonstrated either experimentally or analytically. The staff plans to issue guidelines on Task A-2 in NUREG-0510 in June, 1979.
4. Resolved, subject to review completion by Structural Engineering Branch.
5. The applicant plans to show that MSIV leakage with sonic flow through a ruptured OTSG tube, would be negligible. Erie and Davis Besse 1 were cited as examples. The applicant is considering deletion of the leakage penetration system.
6. The staff noted that the technical specifications do not specify leakage limits for closed systems outside containment (e.g., containment spray systems, etc.) during hydrotesting. Justification for these proposed limits is required.

There is an inconsistency between the Midland technical specifications and FSAR Chapter 6 regarding 10 CFR 50 Appendix J. Timely approval by the Commission of a change to Appendix J is not currently anticipated.

Auxiliary Systems Branch

1. Staff review of the applicant's response by Revision 19 is in progress.
2. Review of the topical report is in progress. Q-1s will be issued in May 1979.

- 3. & 4. Staff review is continuing.
- 5. Awaiting resolution of ETSB item 4.
- 6. Q-1 submittal is presently estimated for May 1979.
- Extra item: The staff also asked for further discussions on how icing of the lines to the operators for the outdoor MSIVs is prevented.

Quality Assurance Branch

- 1a. Unresolved. The position remains unfilled.
- 1b. The applicant will reply in May, 1979.
- 2. Not discussed.
- 3. Unresolved. Additional information will be submitted by the applicant in March and April 1979.
- 4. Not discussed.

ENCLOSURE 4

Items Discussed April 11, 1979

Structural Engineering Branch*

1. Not discussed.
2. The OPTCON program will be submitted in April 1979. The response to request 130.21 in FSAR Revision 19 is based upon code material properties and "allowable stresses" refer to ACI-359. A subscript error will be corrected.
3. The staff suggested that, if necessary, consideration be given to use of actual properties where this can be justified and to use of a site specific response spectra.
4. The staff finds the applicants response to request 130.24 to be unacceptable. The distinction between structural damping and equipment damping was discussed during the meeting. The staff noted that OBE and SSE damping was not treated adequately in the response. The staff requested that the response to request 130.24 be revised to compare OBE and SSE at each point (both vertical and horizontal) for structural and mechanical damping using both RG 1.61 and site specific damping. Also clarify response to indicate whether RG 1.92 was used. The applicant will respond in May 1979.
5. Unresolved. The applicant's response by FSAR Revision 19 transferred the Bechtel topical report BP-TOP-1, with some modifications, to the Midland FSAR as Appendix 3D. However the modifications do not provide all the information which was asked for during the staff's generic review which resulted in acceptance of Revision 3 of the topical. Appendix 3D does not address how closely-spaced modes are handled; and uses cyclic criteria based upon Revision 0 of the report which the staff found unacceptable. The staff requires that FSAR Appendix 3D be revised to respond to all requests issued as part of the staff's generic review of the earlier revisions of the topical report.

Geology/Seismology Branch

1. The staff does not at this time accept that the Michigan Basin Tectonic Province is separate from the large Central Stable Region tectonic province. Therefore, the staff does not accept the reference acceleration value of 0.12g to which the Midland Plant has been built. The staff's requirements will depend, in part, upon the approach ultimately to be adopted for other plants (Sequoyah and Davis Besse). Further meetings with Consumers Power on this subject will be held.

*These items are further affected by G/S Branch item 1 hereto.

2. Discussed as part of SEB items.

Geotechnical Engineering Section

1. Not discussed.
2. Resolved by response to request 362.2 in FSAR Revision 19.
3. Unresolved. The staff requested (1) a figure of the phreatic surface used for design, and (2) justification that the phreatic surface used for design is conservative.

Mechanical Engineering Branch

1. The remaining qualification summaries will be submitted in May 1979. The NSSS equipment does not appear to be compatible with a July 1979 SQRT site review.
2. Additional information on the closing ability of the 18-inch valves will be provided.
3. The staff will further describe the inadequacies noted on previous plants regarding the valve analyses performed by Dresser.
- 4., 5., 6. Not discussed.
7. No change in status.
8. Unresolved. The response to request 110.55 is ambiguous as to compliance with RG 1.121.
9. Unresolved. The staff requested test data on pullout.

Hydrology

1. The applicant has elected not to use sandbagging. A response in April 1979 will describe the new design approach based upon water tight doors and removable panels.
2. No open item.
3. & 4. The applicant will respond in April 1979.
5. The staff requested additional information, including discharge duration curves used in the analysis, outflow versus elevation curves for the scuppers, and clarification of the antecedent water curve.

Emergency Planning Branch

1. Unresolved. How are the various indications correlated? The applicant was referred to Sections 4.1.4 and 4.1.5 of RG 1.101, Annex A. The staff also requested that Figure C-1 be revised to extend beyond the LPZ.
2. Unresolved. The staff stated that the Midland FSAR must either include as a supplement or annex the state and local plans, or follow the alternate in request 432.32.
3. Unresolved. Some errors in the cross-reference index were noted which also affects request 432.19.
4. The responses to requests 432.28, 432.29, 432.34 and 432.35 are accepted. Requests 432.9, 432.16, 432.23, 432.24, 432.27, and 432.33 all relate to compliance with 10 CFR 50 Appendix E Section IV C, are part of item 1 above, and are unresolved. The response to request 432.15 is unacceptable since it is ambiguous as to what equipment will be located at the emergency area (See Section 7.4 of RG 1.101 Annex A), and it omitted required information from FSAR revision 15 regarding SEP section 8.3 which was acceptable.

Reactor Safeguards Licensing Branch

1. Unresolved. The applicant will submit plans in April or May, 1979.

MTG - IE III / CP.
2/23/79

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MEETING SUMMARY DISTRIBUTION

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