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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE ADMINISTRATIVE JUDGE HELEN F. HOYT, ESQ.

In the matter of:)
TOLEDO EDISON CO. and CLEVELAND)
ELECTRIC ILLUMINATING CO.)
(Davis-Besse Nuclear Power)
Station, Unit I)

OFFICE OF THE ADMINISTRATIVE JUDGE
DOCKETING SECTION
Docket No. 50-346 (ML)

DAVIS-BESSE HEARING ON SITE DISPOSAL OF SLUDGE-RESIN LOW LEVEL RADIOACTIVE WASTES

FINDING OF FACTS:

1. In 1968-9 TEC traded the small Darby Marsh for the 954 acre Navarre Marsh.
2. TEC did not inform the Department of the Interior that the Navarre Marsh was part of the Ottawa County Wildlife Refuge Sanctuary and an International Bird Flyway.
3. TEC promised to use about 200 acres of the marsh for the Davis-Besse Nuclear Power Plant and to preserve the rest of the marsh as a wildlife refuge, although TEC already had plans to build 5 reactors on this site along Lake Erie shores.
4. TEC also promised at the construction license hearing that there would be no waste disposal on the site. TEC's operating license (Docket No. 50-346---NPF-3) speaks of the reprocessing of spent fuel and of plans to package and ship low level wastes to a licensed landfill within 300 miles. It also states there would be no effluent on site. Again these waste plans are stated in the Davis-Besse FSAR-1973 and also the FES-co-1973.
5. In 1979 TEC had applied for Limited Advance Work Authority for Units II & III to be built just south of Unit I. These were cancelled in 1981, but account for two of the assortment of ponds on the site. TEC's borrow pits, numerous ponds, and drainage ditch have a run-off into the Toussaint River, which empties into Lake Erie. We wonder if the settling basin does too.
6. In 1985 we learn from the Federal Register (Oct. 9, 1985) that TEC planned a shallow site burial of its sludge-resin waste from its settling ponds--also that TEC already had received NRC permission since it was ruled as having no significant environmental impact. This arrangement with the NRC was made by correspondence and telephone calls. Again there was no mention of the special environmental issues. Ohio people were also shocked to learn that there was a settling pond on the Davis-Besse site already authorized and operating.
7. Widespread objections of countless Ohio organizations and individuals to this crude site disposal plan led to Governor Celeste's request that the State of Ohio be an intervenor in the hearing through the Office of the Attorney General and the Ohio Department of Natural Resources.
8. The hearing was scheduled for the last week in June-1986, but TEC was granted a delay because of a strike among its employees. Since the Davis-Besse plant had not been operating for over a year following the June-1985 serious malfunction, people thought it a bit odd that employees would be striking for fringe benefits at this time. The hearing was rescheduled for the first week in August with a tour Aug. 4 of the Davis-Besse site for the intervenors.

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9. The tour included a view of the incredibly primitive settling ponds and of a field marked with red-flagged stakes to indicate the general location of the burial site. Intervenors were provided no view of the dikes nor were they clearly labeled on the map. NRC's Judges Hoyt and Kline greeted the intervenors.
10. Ohioans objections to the site burial were many:
 - a. Danger of further contamination of Lake Erie after 25 years of cleanup efforts.
 - b. Danger to millions who depended on Lake Erie for water supplies and to north-western Ohioans whose essential ground water might be contaminated.
 - c. Endangerment of Ohio's environmental resources, since this area had many profitable industries which might be adversely affected--especially the recreational, such as camping, sport-fishing and boating.
 - d. Destruction of state wildlife preserves from loss of vegetation and loss of wildlife habitats for many native species, including several birds on the endangered species list. Endangerment of migrating birds. Radiation in the food chain.
 - e. Destruction of fish life since their spawning reefs are off-shore in this area. Reduction and contamination of fish with losses to the very profitable fish industry.
 - f. Shock that the NRC would consider a marsh or floodplane area suitable for a low level waste dump and crude settling ponds.
 - g. Disgust that TEC is now pretending that the Navarre Marsh is only 400 acres east and north of the Davis-Besse site.
11. Our intervening group had been informed by area fishermen that the Davis-Besse dikes, after years of pounding waves, were in very deteriorated condition. We made that one of our contentions. Fishermen later informed us that TEC had repaired and upgraded the dikes during the summer, before the hearing but after our contentions had been received.
12. The first day of the hearing Mr. Anthony Celebrezze, Ohio Attorney General, and Mr. Joseph Sommer, Director of the Ohio Department of Natural Resources, made very effective presentations of the reasons for Ohio concerns. Then Mrs. Virginia Aveni, Deputy Director of Ohio EPA explained the responsibilities of Ohio EPA with respect to TEC's plans.
13. The main issues debated in the hearing were naturally:
 - a. The unsuitable geology and hydrology of the Davis-Besse site for a low level shallow waste burial. The danger of both lake and groundwater contamination.
 - b. The local threat to public health and the effect on the environment---the wildlife refuge, migrating birds, the loss of commercial enterprises and the loss of state recreational areas.
 - c. The destructive effect of frequent violent storms, winds and flooding, and their effect on erosion of the burial site and consequent migration of its hazardous contents.
 - d. The chemistry and durability of the resins used to absorb the radionuclides from the secondary demineralizing system. The possible reaction of other substances with the resins (Ex. kiln dust) and release of radionuclides into the environment.
 - e. The lack of testing and necessary specifics to assure safety in the construction and operation of the ^{burial} cells.

The State of Ohio was represented by 3 Deputy Attorneys General and 4 witnesses from the Ohio Department of Natural Resources, whose work was very clearcut and effective. TEC had 13 witnesses- all well rehearsed- including several from its own staff. For most of the public present this was a first experience with an NRC hearing.

14. The State contended that TEC's geology studies were quite inadequate and revealed a limited understanding of indications of soil types, permeability, and water flow patterns at the Davis-Besse site. State also thought TEC should have made a thorough hydrology study.
15. Mr. Van Kley busily pried details out of TEC's witnesses bit by bit until Mr. Hendron admitted that TEC's geology findings and hydrological observations were done in 1970 relating to the construction of the Davis-Besse nuclear plant.
16. The State testified that there had been a major advancement the last decade in both knowledge in the fields of both geology and hydrology and understanding of soil indications. Greatly improved instruments and equipment were in use with advanced techniques. Also the process of deep excavation in the past usually smeared evidence of sand and gravel layers, of cracks, of soil permeability, and of tiny water flow pathways. Bore logs were frequently deceptive where parts of the core were missing.
17. TEC contended that State's observations and references to studies of experts made their statements generic rather than specifically applicable to the Davis-Besse area in both geology and hydrology.
18. State pointed out the similarity of till, glaciolacustrine, clay and sand patterns of soils for the whole Great Lakes area, and especially for Ottawa County with its widespread marsh areas. State reviewed evidence of early glacial movements in soil patterns. State contended there was an upper till aquifer which, when saturated, drained into Lake Erie, the Navarre Marsh, and the Toussaint River. Also State cited indications of drainage pathways-some lateral and then down into the ground water and bedrock lower aquifer. Mr. Pavey insisted that by all indications, the water in the glacial sediments connected to the bedrock--that the fluctuations were there. State cited "The Soil Survey of Ottawa County" by Gordon and Huebner in support of its findings of cracks, fractures, thin seams, lenses, and former tree root flow paths (from the early forests) to account for drainage down to the ground water aquifer from the till above. Even one of TEC's own boring logs (B-125 from 1974--ATEC Assn., Inc.) documented the presence of sand layers.
19. TEC insisted there was no upper aquifer and that layers of till and glaciolacustrine lacked any permeability. State cited inadequate TEC testing and the deceptiveness of faulty bore cores with parts missing.
20. State contended that the whole of northwestern Ohio depended on the same ground water bedrock aquifer system, which included the entire Ottawa Marsh area. TEC stated that well water in the Davis-Besse area was unpleasant from sulfur content. Several systems for sulfur removal were said to be successfully in use among those dependent on the well water.
21. Both sides agreed the limestone-dolomite bedrock was highly permeable. Also the ground water levels were responsive to weather, seasons, lake levels, river levels, and marshlands. When high northeast winds raised the Lake Erie water levels at the west end, the ground water levels also rose. After the storm, the flow of both was gradually reversed. TEC verified the extent of the groundwater system and its permeability from the wide radius affected by its dewatering procedures in early 1970's. State observed that ground water was released into Lake Erie through the permeable

bedrock that extended out into Lake Erie.

22. State challenged TEC's report of the average frequency of flooding incidents in the Ottawa area. When the number of incidents was averaged over a 25 year period, the problem appeared less menacing. This method hid the fact that with the present unprecedented high levels of Lake Erie, about 3/4 of the flooding episodes had occurred during the preceding 6 or 8 years. In other words, flooding had markedly increased with high lake levels. Prognostications about future lake levels differed. State's source anticipated a gradual continued level increase through 1994. TEC's witnesses are sure that lake levels will recede back to normal average levels by 1994. Time will tell. The Davis-Besse site was flooded in both 1972 and 1973. Also following 4 northeast windstorms between 1968 and 1973, the Davis-Besse shoreline receded 20--60 feet. Shore property erosion is of major concern these days.
23. TEC plans 6 burial cells--a plan presented just before the hearing. The first is a triple cell unit, next a double unit, and finally a single cell about 162 by 162 ft. The cells are southeast of the plant and close to the easterly marsh, and not far from the Toussaint, which empties into Lake Erie. TEC plans to fill one cell every 5 years. Each will be shaped like a square bowl with a 4 ft. liner composed of 2'6" of compacted clay, then a plastic membrane liner, plus a foot of a leachate collection layer topped with 6" of clay. The sloping sides will be supported by a clay dike with rip-rap. The burial depth will be about 8 1/4 ft. to hold approximately 34,000 ft.³ of the 5 year accumulation of sludge-resin waste. The topper will be 4 ft. of clay in the center tapering in all directions to 2 ft. at the edges and overlapping the top of the outward sloping dike. The waste is to be mixed with cement kiln dust, which should harden the waste to compact clay consistency.
24. We don't know how the wastes will be pumped out of the settling pond. Or what or how they'll dispose of the water that comes with it. We don't know how they plan to mix 34,000 ft.³ of sludge with cement kiln dust or decide how much kiln dust is needed. We don't know the kind or thickness of the membrane liner or whether it will split under the weight of a bulldozer or backhoe--even with large rubber tires. We don't know whether the clay liner will hold up either or whether it will crack when dried out.
25. TEC estimates 8 or 9 days to transfer the waste from settling basin to burial cell and mix it with kiln dust. Then the waste will be exposed for a couple days to the weather while the cap is being applied. We don't know what the chemical reaction will be between the kiln dust and the resin or how much radiation could be released from the resin to migrate about the area. We don't know the effect of ground or water-contained chemicals reacting with the resin. We don't know how long the cell will remain intact under winds, storms, and flooding. We're not sure about the impulses of furry burrowing creatures. We don't know whether TEC is creating another "BATHTUB EFFECT." Ohioans would be grateful if the NRC would call a halt to it.

Northern Ohioans would be eternally grateful also if the NRC would take a good hard look at the even more hazardous primitive settling basin on the Davis-Besse site to see if they honestly still think "no significant environmental impact."

Sept. 8, 1986
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Judge Helen F. Hoyt
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by Federal Express

Respectfully submitted on behalf of Intervenor:
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CERTIFICATE OF SERVICE

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