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THE DISPOSAL OF SPENT POWDEX® ION EXCHANGE MATERIALS

by
Dr. Robert Kunin, Consultant
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October 25, 1979

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THE DISPOSAL OF SPENT POWDEX® ION EXCHANGE MATERIALS

Introduction

This report is an analysis of the rational involved in the disposal of Powdex ion exchange materials employed in power utilities. In many respects, it also applies to the disposal of other ion exchange materials of known origin and history. Since the origin and history of Powdex resins in a utility are well-documented and the composition of the new and used materials are well-defined, the analysis contained in the report is directly pertinent to the discharge of Powdex. The analysis could also be applied to other resin systems (Seprex) that may be equally defined.

I. The Nature of Powdex® Materials

Powdex® materials are special preparations of ion exchange resins in finely divided forms. The Powdex formulations normally contain a mixture of cation exchange resins in the hydrogen or ammonium forms and anion exchange resins in the hydroxide form. The cation exchange resins are of the sulfonated styrene-divinylbenzene structure and the anion exchange resins are quaternary ammonium derivatives of similar styrene-divinylbenzene copolymers. Since these structures are highly crosslinked polyelectrolytes, they are very insoluble and truly resistent to biological degradation. These copolymer skeletal structures contribute nothing to the overall BOD, COD, or even TOC content of solutions or waters that contact them. In essence, the only activity of these ion exchange resins is their ion exchange activity.

II. Toxicity of Powdex Materials

The ion exchange resins contained in Powdex formulations have been used in many, many applications approved by the Food & Drug Administration (FDA), Public Health Service (PHS), United States Dept. of Agriculture (USDA), and the U.S. Pharmacopia. Further, these same ion exchange resins have been used as artificial soil media for the growth of plants without any adverse effects. The non-toxic aspects of the Powdex ion exchange resins may be brought into focus dramatically by the fact that the ion exchange resin products used in Powdex formulations have been approved for the hemoperfusion of blood ("in vivo" treatment of blood) and as drug or drug-carriers for oral administration in large dosages (10-60 grams per day).

Not only are many of our drinking water supplies treated by these ion exchange resins, many of our food products (dextrose, fructose, sucrose, sorbitol, glycerine, etc.) are similarly treated.

References pertaining to these applications attesting to the non-toxicity of these ion exchange resins and their approved uses are as follows:

1. Kunin, Robert, Ion Exchange Resins, Krieger Pub. Co., New York, (1972); J. Wiley, New York (1958).

2. Nachod, F. and Schubert, J., Ion Exchange Technology, Acad. Press, New York (1956).

3. Martin, G. J., Ion Exchange and Adsorption Agents in Medicine, Little, Brown & Co., Boston (1955).

4. Food and Drug Administration, Regulation No. 121.1148, Subpart D, July 13, 1964.

III. Disposal of Powdex Materials

In view of the previous evidence on the lack of toxicity of the ion exchange resins contained in the Powdex formulations, any concerns over environmental problems associated with the disposal of such materials must limit themselves to the toxicity of the materials adsorbed by the ion exchange resins or part of the ion exchange complex.

When employed in a typical power utility, the Powdex usage rate will be approximately 75 lbs. per day with a discharge of 300 lbs in 8000 gallons of water every four days. When used, the Powdex will adsorb a maximum of 0.2 lbs. of corrosion products per lb. of Powdex. These corrosion products are essentially iron and copper oxides and are present at a ratio of approximately 95 parts iron/part copper. These oxides are very refractory or insoluble. Their solubilities are such that they will impart far less than 1 part per million to the waterways and levels well within the limits of EPA. The exchange complex of the "spent" Powdex material should probably be in the sodium and chloride ionic states. Some ammonium and bicarbonate ions may also be present; however, the ammonium and bicarbonate levels in the Powdex formulations should be negligible since the Powdex will have been exhausted prior to discharge.

Recognizing the cation exchange resin to have a capacity of 4.5 milliequivalents per gram and the anion exchange resin to have

a capacity of 4 meq/g and the formulation to contain equal weights of cation and anion exchange resin, the daily discharge should contain no more than 3.9 lbs of sodium and 5.3 lbs of chloride. However, since the estuary is brackish and already contains high concentrations of NaCl, very little of the sodium and chloride contained in the "spent" Powdex will be released. Even if it were all released, the quantity released would be insignificant when compared to the sodium chloride already present in the estuary or discharge basin.

The refractory iron and copper oxides contained in the spent Powdex will settle to the base of the estuary and contribute no significant levels of soluble iron or copper to the water in the estuary. If any traces of iron or copper are solubilized, these traces will be readily adsorbed by the ion exchange resin in exchange for sodium. Hence, one can be well-assured that the iron and copper should pose no threat to the environment. In fact, the total quantities of iron and copper discharged with the spent Powdex probably will be beneficial to the environment, particularly in subtropical regions such as Florida, where it is well-known that the soils are deficient in iron and copper. It should also be noted that the addition of the spent Powdex to such soils would also be a benefit, since it would add to the exchange capacity of the soils which are known to be deficient in exchange capacity in Florida and other subtropical regions.

In view of the evidence in the foregoing discussion, it would appear that the spent Powdex material can be safely discharged to the

environment into either water bodies or even as landfill. From an overview, it would appear that the discharge would even be helpful to the environment. For a material as well defined as spent Powdex, no risks are entailed in the disposal of this material.

Robert Kunin
Oct. 25, 1979

RK/ck

DR. ROBERT KUNIN - BIOGRAPHICAL SKETCH

Dr. Robert Kunin received his B.S. and Ph.D. degrees from Rutgers University in 1939 and 1942, respectively. He began his career as an Associate Chemist with the Tennessee Valley Authority in 1942 and served as a Senior Scientist with the Manhattan District atom bomb project at Columbia University during 1944-45. Dr. Kunin has been with the Rohm and Haas Company from 1946-1976 as a Laboratory Head, Research Associate, a Senior Staff Associate, and a Development Manager of the Fluid Process Chemicals and Industrial Chemicals Departments. Dr. Kunin is now a consultant specializing in ion exchange, adsorption, water treatment, pollution control, and chemical processing. In the area of chemical processing he has special expertise in the pharmaceutical, sugar, and chemical process industries.

Dr. Kunin's main areas of research have been in ion exchange, catalysis, adsorption, and liquid-liquid extraction. He has written three books and approximately 250 articles, and 30 patents in these fields are accredited to him.

Dr. Kunin has been a Lecturer at the University of Pennsylvania and the American University. He is a member of the American Chemical Society, American Institute of Chemists, American Association for the Advancement of Science, American Institute of Chemical Engineers, and the American Society for Testing and Materials (ASTM).

One of the major contributions of Dr. Kunin has been the development of ion exchange systems for the treatment of water. One of his inventions, the MONOBED or Mixed Bed technique, is now used universally throughout the world and has been shown to be indispensible for the production of the ultra-pure water that is so necessary for the power field. Without this technique it would be difficult to achieve the purity of water and steam required for supercritical boilers. The MONOBED technique now serves a most important function in nuclear-powered submarines and in the new nuclear-powered surface vessels. Dr. Kunin has recently developed a new MONOBED system that is capable of removing the last traces of colloids from deionized water enabling one to achieve the "ultimate" quality water demanded by the electronics industry. The MONOBED technique is also now universally employed for the commercial production of high quality sugar syrups. Some of the other water treatment techniques he developed are now being used for the removal of fluorides from water and for the dealkalization of process water. He has also been a pioneer in the development of new adsorbents for the treatment of water and waste effluents.

During the course of his work at Rohm and Haas Company, Dr. Kunin has served as a consultant to the Blood Preservation Laboratory at Harvard University and the Atomic Energy Commission at Oak Ridge. During the course

of this activity, many of the principles and techniques he developed inspired further research in the use of ion exchange and adsorbents for the treatment of blood and for the development of artificial kidney devices. This technique is now being used in various hospitals throughout the world for treating patients who have absorbed lethal dosages of various drugs and toxic chemicals. His work with the Atomic Energy Commission and at Rohm and Haas Company on the use of ion exchange for recovering and purifying uranium was instrumental in establishing this technique commercially throughout the world.

Dr. Kunin's studies on ion exchange led to the commercial use of ion exchange for the production of such antibiotics as streptomycin and neomycin.

Dr. Kunin's books, publications, and lectures throughout industry and at many universities, colleges, and schools have served to educate and instruct many in the use of ion exchange in many fields of study and application.

In recent years, Dr. Kunin's efforts have been directed towards the areas of desalination and pollution control and abatement. The DESAL Process has now reached the commercial stage and is now being used in the U. S. and Italy for the desalination of brackish water. He has modified his process for reclaiming acid mine drainage waters emanating from coal mines. The Commonwealth of Pennsylvania has recently erected a large plant based upon this process to treat the water emanating from the coal mines and the water will be supplied to the community of Philipsburg, Pennsylvania.

. . .

In 1966, Dr. Kunin was awarded the Howard N. Potts Gold Medal of the Franklin Institute for his work in the field of ion exchange. In 1979 he was the recipient of the International Water Conference Award of Merit.

QUESTION 6: Provide a description of the location of the demineralizer waste discharge.

ANSWER: The point of discharge is expected to be on the discharge side of the facility.

QUESTION 7: Describe the dilution that will take place due to mixing in the immediate area of the discharge.

ANSWER: Under FPL's current plans for handling condensate polisher wastes, only high quality supernatant liquid would be discharged into the facility cooling canal system. The discharge point would be at the facility's discharge basin. The discharge stream is not expected to exceed 150 gpm. Flow rate through the facility discharge basin due to forced pumping is approximately $1.8X10^6$ gpm with all circulating water pumps running. Due to the high quality of the discharge, FPL has no minimum requirement for circulating flow during the discharge.

QUESTION 8: Describe treatment of the waste stream which will be performed prior to release.

ANSWER: FPL's current plan for the handling of condensate polisher waste is as follows:

> Spent resins would be backwashed as a resin-water slurry (using condensate quality backwash water) into a backwash receiver tank. Powdex resin and other solids would then be separated from the slurry leaving a high quality supernatant liquid for discharge into the facility cooling canal system. We plan to dispose of the solid resins by land burial.

QUESTION 9: List the effluent parameters which will be monitored.

ANSWER: It is presently estimated that there will be no environmental degradation caused by the effluent release as a result of the operation of the full flow condendate polishing demineralizer system. The water quality of the polishing demineralizer system effluent discharge is expected to be superior to the water quality of the cooling canal system, Biscayne Bay, or Card Sound.

FPL has been issued a National Pollutant Discharge Elimination System (NPDES) permit for Turkey Point Plant, NPDES #FL001562

by the United States Environmental Protection Agency (EPA) on June 14, 1978. That permit authorizes discharges to the circulating water cooling canal system without limitations or monitoring requirements provided that there is no surface discharge to Biscayne Bay or Card Sound. The effluent discharge from the full flow condensate polishing demineralizer system will be consistent with the terms and conditions of this permit. The permit requires FPL to monitor the water quality of the circulating water cooling canal system. Grab samples must be taken quarterly at the outlet from Lake Warren and must include the following parameters: salinity; total suspended solids; and total zinc, iron and copper. Results are submitted in reports annually on January 31 of each year.

In the event of indications of primary to secondary leakage, samples will be collected from the backwash receiver tank and tested for radioactivity prior to disposal of the wastes. Liquid radioactive releases are controlled by Appendix A of the Turkey Point operating licenses (Technical Specifications, Section 3.9) as well as by written procedures. Both quantity and concentrations are controlled. The releases are required to and do meet the restrictions imposed by 10 CFR Part 20 and Part 50, Appendix I.

Disposal of any radioactively contaminated polisher wastes will be in accordance with applicable NRC regulations concerning the discharge and/or disposal of solid radioactive wastes and radioactive effluents.

<u>QUESTION 10:</u> Provide a list of organisms likely to be present in the receiving waters near the point of discharge.

<u>ANSWER:</u> Lists of organisms likely to be present in the cooling canal system have been compiled from published and unpublished sources. The lists of organisms are presented in the following tables, Table A-1 and Table A-2.

<u>QUESTION 11:</u> Evaluate the impact of discharge concentrations of contaminants present in the waste stream on the aquatic organisms found near the plant.

<u>ANSWER:</u> FPL's current plans call for discharging only high quality supernatant liquid to the facility cooling canal system. The supernatant will be of higher quality than the water in the cooling canal system. The supernatant will therefore

have no deleterious effect on the organisms living in the cooling canal system.

QUESTION 12: Describe the biological monitoring programs that will be conducted to assess the environmental impacts associated with operation of the demineralizer system.

ANSWER: The existing biological monitoring program (Environmental Technical Specification (ETS) for FPL Turkey Point Units 3 and 4) which is implemented for the Turkey Point Plant cooling canals will be used. Plankton (ETS Section 4.1.1.1.1), fish (ETS Section 4.1.1.1.2), and benthos (ETS Section 4.1.1.1.3) monitoring will provide enough information to assess the environmental impacts associated with operation of the demineralizer system.

QUESTION 13: Describe the status of all relevant permits required by other state, local and Federal agencies.

ANSWER: FPL has applied for and received all required relevant permits for the Turkey Point Plant from state, local or Federal agencies. Any new application or amendments required as a result of changes or additions to current operating practices will be made at the appropriate time.

QUESTION B: Provide the design details and exact location of the storage building (referred to in contentions 6* and 11d). Include the structural design details to the extent necessary for the staff to determine the adequacy of the building to withstand hurricanes and floods. Also include the weight and dimensions of the steam generator lower assemblies to be stored in the building.

Provide the details of the method of sealing the steam generator lower assemblies; weld design, weld material, cap material and dimensions, corrosion protection, and any related information that will be needed to evaluate the possibility of radioactive material leaking out of the stored assemblies.

*Contentions referred to in this request are to be taken as given in the Atomic Safety and Licensing Board's "Order Relative to Contentions and Discovery" dated September 25, 1979.

ANSWER: The conceptual design and nominal dimensions of the storage compound are shown on the attached figure. The final design might change depending on the outcome of ongoing engineering studies and evaluations. Each steam generator lower assembly with steel support saddles will rest on reinforced concrete

bearing pads. The compound will be designed and constructed in accordance with the South Florida Building Code, ACI 318, AWS D1.1 and AISC Manual of Steel Construction.

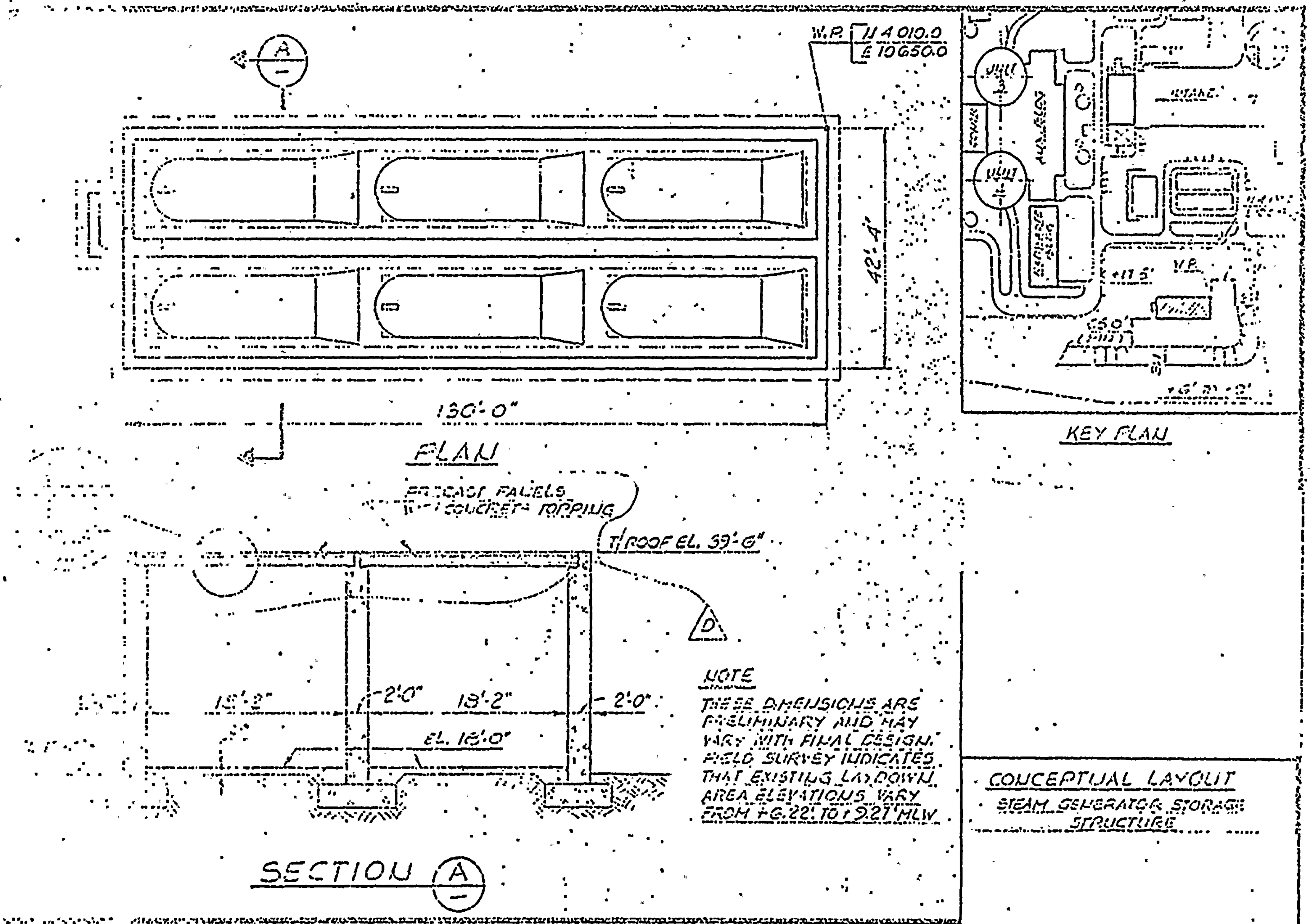
The approximate location of the storage compound in the laydown area is also shown on the attached figure. The current elevation of the laydown area ranges from +6 to +9 feet MLW. The approximate subsurface profile in the vicinity of the storage compound consists of 4 feet of limerock fill over 6 feet of muck under lain by Miami limestone. The existing fill and muck will be excavated to a minimum distance of 15 feet beyond the edge of the storage compound. The entire compound and lay down area will be backfilled or filled as required with compacted limerock fill to + 17' 6" MLW with perimeter slopes of 1-vertical on 3-horizontal. Heavy equipment transport, laydown storage, and heavy lift crane implacements in support of repair and storage operations will require a minimum of 65 feet around the storage compound.

The limerock fill will be compacted to a minimum dry density of 110 pounds per cubic foot which based on laboratory tests yields allowable bearing capacity of approximately 15 kips per square foot, strength of cohesion of approximately 3 kips per square foot, and an internal angle of friction of approximately 39.

A steam generator lower assembly is approximately 39 feet long and 127 inches in diameter except for the last 6 feet 4 inches where the diameter expands linearly from 127 inches to 166 inches. The volume is approximately 3620 cubic feet and the dry weight is approximately 205 tons which yields a total vessel density of about 113 pounds per cubic foot.

The top of the assembly (approximately 13' 10" diameter) and the two channel head nozzles (approximately 31" diameter) will be provided with 3" steel shield plates. The two blowdown nozzles (approximately 2" diameter), one shell drain (1" diameter), and one instrument nozzle (3/4" diameter) will be provided with 1" steel shield plates. The shield plate materials will be ASTM A36 or equivalent and will be welded to the lower assembly openings. Only carbon steel weld materials will be used and the weld throat will be 1" minimum. Since the storage compound will have a water tight roof the lower assemblies will be protected from industrial corrodent and salt spray deposition, hence special corrosion protection will not be required.

FPL is presently evaluating the effects of a postulated design basis hurricane upon the steam generator storage facility and its foundation. The results of this evaluation will be made available upon completion.



W.P. N 4 010.0
E 10650.0
42'-4"
130'-0"
PLAN
KEY PLAN
T/ROOF EL. 39'-6"
D
18'-2"
2'-0"
18'-2"
2'-0"
EL. 16'-0"
NOTE
THESE DIMENSIONS ARE PRELIMINARY AND MAY VARY WITH FINAL DESIGN. FIELD SURVEY INDICATES THAT EXISTING LAYDOWN AREA ELEVATIONS VARY FROM +6.22' TO +9.27' MLW
SECTION A
CONCEPTUAL LAYOUT
STEAM GENERATOR STORAGE STRUCTURE

QUESTION C: Provide the costs involved in the additions of the demineralizers (referred to in contentions 7 and 11e).

ANSWER: The estimated costs for installing a condensate polishing demineralizer system for Turkey Point Units 3 and 4 is $9.1 million.

QUESTION D: Provide the costs involved in the condenser retubing (referred to in contention 11e).

ANSWER: The cost involved in retubing the Turkey Point Units 3 and 4 condensers was approximately $1 million per water box; or a total of $8 million.

QUESTION E: Provide a cost update of the repair project from December 1977 to the present time (discussed in contention 11f).

ANSWER: The repair of the Turkey Point Units 3 and 4 steam generators is estimated to be $119.3 million (1979 dollars).

TABLE A-1

ORGANISMS OCCURRING IN THE TURKEY POINT COOLING CANAL SYSTEM
(ANNUAL REPORTS, ABI 1974-1980)

ANNELIDA
Polychaeta

Amphicteis gunneri floridus
Autolytus brevicirrata
Capitella capitata
Caulleriella killariensis
Cirriformia filigera
Dorvillea sociabilis
Fabricia sp.
Glycera americana
Haploscoloplos foliosus
Laonome salmicidis
Lumbrineris sp.
Maldane sarsi
Marphysa sanguinea
Nereis succinea
Odontosyllis enopla
Paraonides lyra
Pista cristata
Platynereis dumerillii
Podarke obscura
Polydora ligni
Polyophthalmus pictus
Prionospio heterobranchia texana
Schistomeringos rudolphi
Scyphoproctus sp.
Syllis sp.
Terebellides stroemi
Trichobranchus glacialis
Typosyllis sp.

MOLLUSCA
Gastropoda

Batillaria minima
Bulla striata
Bulla occidentale
Crepidula fornicata
Crepidula maculosa
Cyclostremiscus trilix
Cylichna cerina
Haminoea elegans
Hydrobia minuta

MOLLUSCA
Gastropoda (continued)

Prunum apicinum
Retusa eburnea

MOLLUSCA
Pelecypoda

Astarte nana
Chione cancellata
Chione grus
Diplodonta nucleiformis
Gouldia cerina
Lucina multilineata
Lyonsia floridana
modulus carchedonius
Pitar albida
Pseudocyrene floridana
Tellina sp.
Tellina alterata

ARTHROPODA
Pycnogonida

Anoplodactylus lentus

ARTHROPODA
Crustacea

Cylindroleberis mariae
Sarsiella americana
Harpacticoida
Oxyurostylis smithi
Leptochelia savignyi
Aegathoa oculata
Cymodoce faxoni
Erichsonella filiformis
Idotea metallica
Sphaeroma quadridentatum
Elasmopus levis
Erichthonius brasiliensis
Grandidierella bonnieroides
Hemiaegina minuta

ORGANISMS OCCURRING IN THE TURKEY POINT COOLING CANAL SYSTEM
(ANNUAL REPORTS, ABI 1974-19[illegible])

ARTHROPODA
Crustacea (continued)

Lysianopsis alba
Microdeutopus sp.
Mysis stenolepis
Taphromysis bowmani
Alpheus armillatus
Hippolyte pleuracantha
Palaemonetes pugio
Thor floridanus
Pinnixia sayana

ECHINODERMATA
Ophiuroidea

Amphipholis squamata

MISCELLANEOUS

Echiuroid worms.
Priapulid worms
Sea squirts

SHELLFISHES

Callinectes sapidus
Penaeus spp.
Menippe mercenaria
Panulirus argus
Limulus polyphemus

FISHES

Floridichthys carpio
Cyprinodon variegatus
Poecilia latipinna
Lophogobius cyprinoides
Gerres cinereus
Eucinostomus gula
Belonesox belizanus
Eucinostomus argenteus
Lucania parva
Albula vulpes
Sphyraena barracuda
Opsanus beta
Fundulus confluentus
Lutjanus griseus
Lutjanus apodus

FISHES (continued)

Centropomus undecimalis
Fundulus grandis
Haemulon sciurus
Arius felis
Strongylura notata
Menidia beryllina
Diapterus plumieri
Lagodon rhomoboides
Caranx hippos
Haemulon parrai
Atherinomorus stipes
Mugil cephalus
Elops saurus
Chaetodipterus faber
Syngnathus sp.
Gobionellus sp.
Selene vomer
Strongylura marina
Hippocampus erectus
Echeneis naucrates
Caranx crysos
Trachinotus falcatus
Menticirrhus littoralis
Archosargus probatocephalus
Dormitator maculatus
Microgobius microlepis
Sphoeroides testudineus
Megalops atlantica
Carcharhinus leucas

TABLE A-2

ORGANISMS OCCURRING IN THE TURKEY POINT COOLING CANAL SYSTEM
(FPL, 1975)

Blue Green Algae
- Lyngbya sp.
- Chroococcus planctonica
- Oscillatoria sp.
- Chroococcus gigantea
- Schizothrix calcicola
- Arthrospira sp.
- Spirulina sp.
- Oscillatoria minor
- Merismopedia glauca
- Johannesbaptisia sp.
- Gomphospharia sp.
- Merismopedia punctata
- Anabaena sp.

Euglenophyceae
- Astasia sp.
- Eutreptia sp.

Volvocidae
- Pyramidomonas grossi
- " sp.

Cryptophysida

Silicoflagellida
- Dictyocha fibula

Bacillariophyceae
- Naviula sp.
- Diatoms unid.
- Cymatopleura solea
- Amphora ovalis
- Synedra ulna
- Nitzschia sigmoidea
- Synedra crystallina
- Nitzschia acicularis
- Suvirella sp.
- Pleurosigma sp.
- Synedra superba
- Nitzschia longa

Condensate Polishing Demineralizer System

The new condensate polishing demineralizer system is planned for installation in the condensate/feedwater system at the discharge of the condensate pumps between the pumps and the No. 1 low pressure feedwater heater. The system's function is to purify the condensate by filtration and demineralization to assure high quality feedwater to the steam generators.

The condensate polishing demineralizer system control is independent from the existing condensate/feedwater system. When in use, the system treats full condensate flow from the condensate pumps. A full flow bypass system has been provided to assure continuous uninterrupted condensate/feedwater system operation.

Loss of normal feedwater flow due to pipe break, pump failures, valve malfunctions or loss of outside AC power, is discussed in Section 14.1.11 of FSAR, Chapter 14. Technical specification 3.8 discusses the steam and power conversion system.

The condensate/feedwater system is not a safety related system.

10 CFR 50.59 (a) (2) defines an unreviewed safety question as follows:

> "A proposed change, test, or experiment shall be deemed to involve an unreviewed safety question (1) if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased; or (2) if a possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report may be created; or (3) if the margin of safety as defined in the basis for any technical specification is reduced."

A summary of the review of the planned addition of the demineralizer system against the foregoing definition of an "unreviewed safety question" follows.

With respect to the probability of occurrence of an accident previously evaluated in the FSAR: As discussed previously, a full flow bypass line is provided for the condensate polishing demineralizer system. The probability of a loss of feedwater (LOFW) accident due to a failure in the condensate polishing demineralizer system and a concurrent failure of the bypass control valve to open is extremely small. This probability is not significant when considered in light of the frequency of feedwater transients (2 to 3 per year) as documented in Section 3.1 of NUREG-0560 "Staff Report on the Generic Assessment of Feedwater Transients in PWR's designed by Babcock and Wilcox," May 9, 1979. Therefore, the probability of occurrence of this accident is not increased by the addition of this system.

With respect to the consequences of an accident previously evaluated in the FSAR: The addition of the condensate polishing demineralizer system has no effect on

the severity of any of the accidents discussed in Chapter 14 of the FSAR. The LOFW accident, which is the most severe accident for the feedwater system, has already been evaluated in the FSAR.

With respect to the probability of malfunction of equipment important to safety previously evaluated in the FSAR: The only system affected is the condensate/feedwater system, which is not required to mitigate the consequences of a LOFW accident. The addition of the condensate polishing demineralizer system will have no effect on the auxiliary feedwater system since the systems are totally independent of each other.

With respect to the consequences of the malfunction of the equipment important to safety previously evaluated in the FSAR: For the reason stated above, the addition of the condensate polishing demineralizer system will have no effect on the consequences of malfunction of equipment important to safety.

With respect to the probability of an accident of a different type than analyzed in the FSAR: As discussed earlier, the most severe accident for the condensate/feedwater system is the LOFW. This accident has already been evaluated in the FSAR. The addition of the condensate polishing demineralizer system does not create the possibility for a different type of accident.

With respect to the possibility of malfunction of a different type than any analyzed in the FSAR: For the reason discussed in 2.a above, the addition of condensate polishing demineralizer system would not create the possibility of a malfunction of a different type than considered in Chapter 14 of the FSAR.

With respect to the margin of safety as defined in the basis for any Technical Specification: The addition of the condensate polishing demineralizer system would not decrease any margin of safety discussed in the Facility Technical Specifications.

Conclusion

For the reasons discussed above, addition of the condensate polishing demineralizer system does not involve an "unreviewed safety question" as defined in 10 CFR 50.59 (a) (2). The planned addition of the condensate polishing demineralizer system has also been reviewed against the Facility Technical Specifications. The addition of the condensate polishing demineralizer system does not require a change to Facility Technical Specifications.

March 20, 1980

Neil Chonin, Esq.
New World Tower Building
30th Floor
100 N. Biscayne Boulevard
Miami, Florida 33132

In the Matter of
Florida Power and Light Company
(Turkey Point Nuclear Generating Unit Nos. 3 and 4)
Docket Nos. 50-250 & 50-251 (Proposed Amendments to
Facility Operating Licenses to Permit Steam Generator Repair)

Dear Mr. Chonin:

Per our discussion, I have enclosed a copy of a letter from R. E. Uhrig, Florida Power and Light Company (FPL), to D. G. Eisenhut, NRC, dated March 11, 1980, requesting an additional month (until May 1, 1980) of operation of Turkey Point Unit 4 prior to performing the next steam generator inspection. An NRC Staff written summary of a meeting held between representatives of the NRC, FPL, and Westinghouse on March 4, 1980 to discuss the steam generator inspection program has been served on you under separate cover.

If you have any questions on this matter, please feel free to contact me.

Sincerely,

/s/

Steven C. Goldberg
Counsel for NRC Staff

Enclosure: As stated

cc w/o enclosure: Harold F. Reis, Esq.

NRC Central File w/D&SS & LPDR (7)
Shapar/Engelhardt
Christenbury/Scinto
WJOlmstead/MKarman
SCGoldberg/Chron (2)
JEMoore
MGrotenhuis, 316 Phil.

OFFICE ▶	OELD	OELD				
SURNAME ▶	SCGoldberg:jdl	WJOlmstead				
DATE ▶	3/20/80	3/20/80				

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

March 20, 1980

Neil Chonin, Esq.
New World Tower Building
30th Floor
100 N. Biscayne Boulevard
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Counsel for NRC Staff

Enclosure: As stated

cc w/o enclosure: Harold F. Reis, Esq.