

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petitions for approval of an) DOCKET NO. 870098-EI
 increase in the accrual of nuclear)
 decommissioning costs by Florida Power)
 Corporation and Florida Power & Light)
 Company.)
 _____)

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that direct testimony of George W. Woerner has been served by First Class U. S. Mail on Matthew Childs, Esquire, (Florida Power & Light Company), Steel, Hector & Davis, 310 W. College Avenue, Tallahassee, Florida 32301; and James McGee, Esquire, (Florida Power Corporation), P. O. Box 14042, St. Petersburg, Florida 33733, with a true copy to the following party of record, this 31st day of March, 1989:

Gail P. Fels
 Assistant County Attorney
 Dade County Attorney's Office
 Metro-Dade Center
 111 N. W. First Street
 Suite 2810
 Miami, FL 33128-1993

- ACK _____
- AFA _____
- APP _____
- CAF _____
- CMU _____
- CTR orig
- EAG _____
- LEG 3
- LIN 6
- OPC _____
- RCH _____
- SEC 1
- WAS _____
- OTH _____

M. Robert Christ

 M. ROBERT CHRIST
 Staff Counsel

FLORIDA PUBLIC SERVICE COMMISSION
 101 East Gaines Street
 Fletcher Building - Room 226
 Tallahassee, Florida 32399-0863
 (904) 487-2740

DOCUMENT NUMBER-DATE

03271 MAR 31 1989

FPSC-RECORDS/REPORTING

FLORIDA POWER AND LIGHT and FLORIDA POWER CORPORATION

DOCKET NO. 870098-EI

TESTIMONY OF GEORGE W. WOERNER, BUREAU OF DEPRECIATION

ON BEHALF OF THE FLORIDA PUBLIC SERVICE COMMISSION

DIVISION OF AUDITING AND FINANCIAL ANALYSIS

FILED: MARCH 31, 1989

DOCUMENT NUMBER-DATE
03271 MAR 31 1989
FPSC-RECORDS/REPORTING

1 DIRECT TESTIMONY OF GEORGE W. WOERNER

2 Q Please state your name and business address.

3 A My name is George W. Woerner, my business address is
4 101 East Gaines Street, Tallahassee, Florida 32399-0850.

5 Q By whom are you employed?

6 A I am employed by the Florida Public Service Commission,
7 in the Auditing and Financial Analysis Division, Depreciation
8 Bureau.

9 Q Briefly describe your educational and professional
10 background.

11 A I received a diploma in Electrical Engineering from
12 Baltimore Polytechnic Institute in 1947, an Associate of Arts
13 degree from Brevard Junior College in 1969, a Bachelor of
14 Science degree in Business Administration from Florida
15 Technological University in 1973, and a Master of Science in
16 Public Administration from Florida State University in 1976 and
17 I have credits toward a MBA and Ph.D. Since joining Florida
18 state government in 1971, I have held various positions
19 including Director, Division of Corporations, Department of
20 State; Legislative Analyst for the Joint Legislative Management
21 Committee; Management and Records Analyst for Department of
22 State; Utility Systems Engineer and Engineering Supervisor for
23 the Florida Public Service Commission. I have held offices and
24 memberships in professional associations such as the Association
25 of Energy Engineers, American Society for Public Administration,

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 and Society of Technical Writers and Publishers.

2 Q Briefly outline your duties with the Florida Public
3 Service Commission which would be relevant to your testimony
4 today.

5 A My present duties consist of monitoring the capital
6 recovery position and practices of the regulated utilities, with
7 the purpose of assuring adherence to appropriate procedures,
8 compliance with using assigned depreciation rates and to
9 determine the potential impact on life and salvage parameters of
10 established and newly introduced technologies.

11 Q What is the purpose of your testimony?

12 A To discuss depreciation related problems pertaining to
13 the pending requests for increases in the accrual of nuclear
14 decommissioning costs.

15 Q Have you identified any specific problems in the
16 pending request for an increase in the accrual of nuclear
17 decommissioning costs?

18 A Yes I have.

19 Q Would you please detail your problems?

20 A The problem I have is, that Florida Power Corporation's
21 and Florida Power and Light's studies assume that the
22 non-contaminated assets of the nuclear power plants which may be
23 useable for future electric generation or production of
24 electricity will have only serviceable lives equal to the
25 operating license for the nuclear portion of the plants. These

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 studies are based on the premise that at the time of expiration
2 of their Nuclear Regulatory Commission (NRC) operating licenses
3 all of the generating stations will be junk, should be removed,
4 and the site restored to its preconstruction state as found in
5 Attachments A, B, and C.

6 Attachment A, page A-2 item 15 states "Decommissioning
7 will take place sufficiently far in the future that all
8 equipment will be worn, obsolete and suitable for scrap as dead
9 weight quantities only. No equipment is salvageable as used
10 equipment."

11 In that attachment, item 23 continues "All above grade
12 structures are removed to 3 feet below grade level. Structures
13 will be backfilled to grade level."

14 Also in that attachment, page A-3, item 27 states "The
15 station grounds are planted with vegetable matter for erosion
16 control and will have a final contour consistent with adjacent
17 surroundings."

18 Attachment B, page B-2 item 15 states "Decommissioning
19 will take place sufficiently far in the future that all
20 equipment will be worn obsolete and suitable for scrap as
21 deadweight quantities only. No equipment is salvageable as used
22 equipment."

23 In that attachment, item 23 continues "All above grade
24 structures are to be removed to 3 feet below grade level.
25 Structures will be backfilled to grade level."

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 Also in Attachment B, item 27 states "The station
2 grounds are planted with vegetable matter for erosion control
3 and will have a final contour consistent with adjacent
4 surroundings."

5 Attachment C, page C-2 states "Remove remaining
6 Auxiliary and Intermediate Buildings in a similar manner
7 (controlled blasting to 3 feet below grade) after the equipment
8 has been removed.... Remaining buildings may then be removed
9 using conventional demolition techniques for above ground
10 structures, including the Turbine Building/Heater Bay, Intake
11 and Discharge Structures and other site structures. In
12 addition, outside storage tanks should be drained and removed."

13 In Attachment C on page C-3 it states "4.3.3 Site
14 Conditions at Facility Closeout - It is assumed that the site
15 will be restored by regrading to conform to the adjacent
16 landscape. Sufficient topsoil will be replaced to permit new
17 growth of native vegetation. The intake and discharge
18 structures on-site will be demolished and removed, the
19 circulating water piping collapsed and the depressions
20 backfilled."

21 Also in Attachment C on page C-4, in item 14 it
22 states.... "The decommissioning will take place sufficiently far
23 in the future that all equipment will be worn, obsolete and
24 suitable for scrap as deadweight quantities only. No equipment
25 will be salvageable as used equipment."

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 Also in Attachment C, page C-5, item 26 it states "The
2 station grounds will be planted with vegetable matter for
3 erosion control and will have a final contour suitable for
4 agriculture, range, or timber uses."

5 Q Why don't you agree with the studies' projection of the
6 condition of the plant's assets at the time of final plant
7 shutdown.

8 A Some of the assets at a generating unit, i.e.,
9 structures, pedestals, some piping systems, and station
10 equipment, might be expected to have a life potentially greater
11 than the nuclear operating license. Many other assets of a type
12 which might be useful for future generation will have been
13 replaced through the process of interim retirement a short time
14 prior to final plant shutdown.

15 Q Assuming that you are correct in your assessment of the
16 material condition of the generating station at the time of
17 final shutdown, how would this impact the decommissioning
18 studies submitted by Florida Power and Light and Florida Power
19 Corporation?

20 A Assuming that the assets used in the production of
21 electricity at the nuclear generating station remain in
22 excellent condition and are not contaminated by radioactivity,
23 it appears to me to be wasteful to demolish all of those assets,
24 paid for by the ratepayers, just to allow the site to be used
25 for agriculture, range, or timber, or to remain idle.

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 Q Even though the generating equipment is in excellent
2 condition at the time of final nuclear plant shutdown, won't it
3 ultimately have to be dismantled?

4 A Yes. Ultimately, at some time, the generating station
5 may be dismantled, but not necessarily at the same time as the
6 nuclear contaminated facility.

7 Q Doesn't the NRC require the license holder of a nuclear
8 generating station to collect funds specifically earmarked for
9 dismantlement of the nuclear generating station?

10 A Yes. However, that NRC requirement pertains only to
11 material and/or facilities that are radioactively contaminated
12 and if not disposed of in accordance with nuclear safety
13 requirements could pose a threat to health and safety of the
14 workers at the nuclear generating site and potentially to
15 citizens in the vicinity of the generating site as shown in
16 Attachment D, page D-2.

17 Q What is inherently wrong with collecting money to be
18 used for decommissioning the nuclear side and dismantling the
19 non-nuclear side of the generating station simultaneously?

20 A The money collected from the ratepayers to dismantle an
21 electric generating station are calculated using two factors: 1)
22 Estimated expenses that will be incurred at the time of
23 dismantling, and 2) the period of time over which the generating
24 station would be serving the ratepayer. The second factor is my
25 major concern.

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 Q Would you elaborate or clarify that concern?

2 A Yes, I would. The period of time during which the
3 nuclear decommissioning funds are collected extends from the
4 establishment of the decommissioning fund until final shutdown
5 at termination of the nuclear possession license. The time
6 period during which money should be collected for dismantling a
7 fossil fueled generating station is based on the remaining
8 service life of that plant. The point being that the
9 termination of the license should not dictate the remaining
10 service life of the non-contaminated assets. The generally
11 accepted concept in depreciation accounting is that money used
12 for decommissioning and dismantlement should be collected from
13 the ratepayers over the period of time in which the asset is
14 serving the ratepayers either through a funded reserve or
15 through depreciation rates. To collect it early would place an
16 undue burden on the present ratepayers or to delay collecting
17 the money until a later date would be a burden on future
18 ratepayers that have not had the benefit of the generating
19 station.

20 Q What portion of the proposed decommissioning costs
21 could be attributable to removal of the non-contaminated portion
22 of the plant?

23 A My preliminary estimate, based on Mr. LaGuardia's
24 deposition as shown in Attachment E, is that the dismantling
25 costs for the non-contaminated portion of the Florida Power &

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 Light and Florida Power Corporation's nuclear plants would be
2 about 25 to 30 percent. However, to my knowledge no studies
3 have been conducted on these units differentiating between
4 contaminated assets and non-contaminated assets having potential
5 for re-use. Another estimate is found in Attachment F which
6 states:

7 "Penn Power also states that the total cost to
8 decommission radioactive contaminated facilities
9 including certain required non-contaminated structures
10 would equal approximately 78% of the total cost to
11 decommission Beaver Valley 1 and 75% of the total cost
12 estimate for Perry 1."

13 Q What action do you propose to the Commission regarding
14 the present inability to distinguish between the cost of
15 dismantling contaminated and potentially non-contaminated assets
16 at the time of decommissioning?

17 A I propose that Florida Power and Light and Florida
18 Power Corporation file a new site-specific Nuclear
19 Decommissioning Study within two (2) years. These new studies
20 should be premised on the possibility that, at the termination
21 of the operating license, the non-contaminated portion of the
22 plant assets could be used with a new generating source.

23 Q What would be the purpose of these new studies?

24 A The purpose of the new studies would be to address the
25 problems raised in this proceeding as well as any other

DIRECT TESTIMONY OF GEORGE W. WOERNER

1 associated effects; i.e., taxes.

2 Q What action do you recommend that the Commission take
3 concerning the petitions filed by Florida Power & Light and
4 Florida Power Corporation in this docket.

5 A I recommend that the Commission grant each company its
6 requested new decommissioning trust fund rate pending receipt of
7 the requested new studies and sufficient time for Staff to do an
8 in-depth analysis.

9 Q Does this conclude your testimony?

10 A Yes, it does.

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ATTACHMENT A

EXCERPTS FROM FLORIDA POWER & LIGHT COMPANY

1988 DECOMMISSIONING STUDY

TURKEY POINT UNITS NOS. 3 & 4

DOCKET NO. 870098-EI

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

1988 DECOMMISSIONING STUDY

TURKEY POINT UNIT NOS. 3 & 4

DOCKET NO. 870098-EI

DOCUMENT NUMBER-DATE

06743 JUN 29 1988

REG. RECORDS (REGISTRATION)

- 15 Cont. and scrap reprocessing costs, and (2) a relatively low value of scrap exists in the market. Scrap processing and site removal costs are not included in the estimate.

Decommissioning will take place sufficiently far in the future that all equipment will be worn, obsolete and suitable for scrap as deadweight quantities only. No equipment is salvageable as used equipment.

16. FP&L removes all items of furniture, tools, mobile equipment such as forklifts, trucks, bulldozers, other similar mobile equipment and other such items of personal property owned by FP&L that is easily removed without the use of special equipment. That is, the cost for removal of such non-affixed items is not included in this decommissioning cost estimate.
17. A future FP&L project team assigned to the decommissioning effort will investigate the economics of reusable construction materials.
18. Existing warehouses will remain for use by the demolition contractor and its subcontractors, as well as FP&L. The warehouses will be dismantled as they are no longer needed to support the decommissioning program.
19. All contaminated piping, components and structures other than the reactor vessel and internals are assumed to meet DOT limits for LSA material.
20. Fuel oil tanks will be emptied. Tanks are cleaned by flushing or steam cleaning as required prior to disposal.
21. Acid and caustic tanks are emptied through normal usage.
22. Lubricating and transformer oils are drained and removed from site by a waste disposal vendor.
23. All above grade structures are removed to 3 feet below grade level. Structures will be backfilled to grade level.
24. Water drain holes are drilled in the bottom of all subgrade structures to be abandoned.
25. Piping and electrical manholes are backfilled with a suitable earthen material and abandoned. Vertical pump structures and sumps are backfilled with a suitable earthen material and abandoned.

26. Non-contaminated underground piping (except the service water and circulating water piping) are abandoned without special considerations. Accessible circulating and service water piping are removed/collapsed and backfilled to eliminate the potential for collapse after the site is released for unrestricted access.
27. The station grounds are planted with vegetable matter for erosion control and will have a final contour consistent with adjacent surroundings.
28. The switchyard is intact for use by the balance of the utility's electrical distribution system.
29. Transmission towers remain in place.
30. Culverts and head walls remain in place to allow natural drainage.
31. Soil stabilization material, e.g., rip rap, remains in place.
32. The perimeter fence is moved as appropriate to conform with the technical specifications in force at the various stages in the project.
33. All road and parking area base material remains in place. Road and parking areas with asphalt surfacing or concrete are broken up and the area covered with fill. All gravel road and parking areas remain in place and the area covered with fill.
34. This study estimates that there will be some radioactive waste generated which is greater than 10 CFR 61 Class C quantities, all resultant from disposal of the activated sections of the reactor vessel internals. This waste is disposed of as Class C waste, as there currently are no established guidelines on the disposal for this material.

4.5 COST ESTIMATE SUMMARY

A summary of the decommissioning alternative costs with annual expenditures is provided in Table 4.1. Three scenarios are costed; all three scenarios integrate the decommissioning process for the two units.

As shown in Table 4.1, the first scenario is less costly, in instant or overnight dollars, than the scenarios involving extended delays in the station dismantling. The ultimate cost

ATTACHMENT B

EXCERPTS FROM FLORIDA POWER & LIGHT COMPANY

1988 DECOMMISSIONING STUDY

ST. LUCIE NUCLEAR UNIT NOS. 1 & 2

DOCKET NO. 870098-EI

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

1988 DECOMMISSIONING STUDY

ST. LUCIE NUCLEAR UNIT NOS. 1 & 2

DOCUMENT NUMBER-DATE

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permissible are based on the license limits of available shielded shipping casks. The number and curie content of vessel segments are selected to meet these limits.

10. Overland transport costs for the steam generators are based on discussions with Reliance Trucking of Phoenix, AZ. Reliance has handled the overland transport and installation of NSSS components for several plants. Barging costs are developed from rates published by the S.C. Loveland Co., Inc.
11. Steam generators are removed sequentially and stored on site until all four are ready to be moved. This scenario will consolidate shipping and reduce mobilization costs for the barge, heavy haul vehicles and specialty rail car.
12. Plant conditions & construction:
 - Insulation materials used throughout the station contain no asbestos.
 - Transformers and capacitors are certified to have PCB-free oil.
13. The St. Lucie units are isolated electrically from the rest of the transmission system and completely decommissioned (i.e., the station will be out of service prior to commencing the demolition effort).
14. FP&L will arrange for the electrical power, required to demolish the station, to be brought on-site.
15. Scrap generated during decommissioning is not included as a salvage credit line item in this study for two reasons: (1) the scrap value merely offsets the associated site removal and scrap reprocessing costs, and (2) a relatively low value of scrap exists in the market. Scrap processing and site removal costs are not included in the estimate.

Decommissioning will take place sufficiently far in the future that all equipment will be worn, obsolete and suitable for scrap as deadweight quantities only. No equipment is salvageable as used equipment.
16. FP&L removes all items of furniture, tools, mobile equipment such as forklifts, trucks, bulldozers, other similar mobile equipment and other such items of personal property owned by FP&L that is easily removed without the use of special equipment. That is, the cost for removal of such

non-affixed items is not included in this decommissioning cost estimate.

17. A future FP&L project team assigned to the decommissioning effort will investigate the economics of reusable construction materials.
18. Existing warehouses will remain for use by the demolition contractor and its subcontractors, as well as FP&L. The warehouses will be dismantled as they are no longer needed to support the decommissioning program.
19. All contaminated piping, components and structures other than the reactor vessel and internals are assumed to meet DOT limits for LSA material.
20. Fuel oil tanks will be emptied. Tanks are cleaned by flushing or steam cleaning as required prior to disposal.
21. Acid and caustic tanks are emptied through normal usage.
22. Lubricating and transformer oils are drained and removed from site by a waste disposal vendor.
23. All above grade structures are removed to 3 feet below grade level. Structures will be backfilled to grade level.
24. Water drain holes are drilled in the bottom of all subgrade structures to be abandoned.
25. Piping and electrical manholes are backfilled with a suitable earthen material and abandoned. Vertical pump structures and sumps are backfilled with a suitable earthen material and abandoned.
26. Non-contaminated underground piping (except the service water and circulating water piping) are abandoned without special considerations. Accessible circulating and service water piping are removed/collapsed and backfilled to eliminate the potential for collapse after the site is released for unrestricted access.
27. The station grounds are planted with vegetable matter for erosion control and will have a final contour consistent with adjacent surroundings.
28. The switchyard is intact for use by the balance of the utility's electrical distribution system.

ATTACHMENT C

EXCERPTS FROM FLORIDA POWER CORPORATION

CRYSTAL RIVER NUCLEAR PLANT

DECOMMISSIONING STUDY

DOCKET NO. 870098-EI

- * Remove steel containment liner with oxyacetylene torch and demolish concrete Reactor Building by controlled blasting to three feet below grade.
- * Remove remaining Auxiliary and Intermediate Buildings in a similar manner after the equipment has been removed.
- * Remaining buildings may then be removed using conventional demolition techniques for above ground structures, including the Turbine Building/Heater Bay, Intake and Discharge Structures and other site structures. In addition, outside storage tanks should be drained and removed.
- * Prepare the final dismantling program report.

The main turbine will be dismantled using conventional maintenance procedures; the turbine rotors and shafts will be removed to a clean laydown area for disposal. The lower turbine casings will be removed from their anchors by controlled demolition. The main condensers will be segmented and transported to the laydown area for disposition as scrap along with the lower turbine casings.

4.3.2 Transportation Methods

For the purposes of cost estimation, it was assumed that the NSSS components would be moved by rail to the regional burial facility. These payloads include the reactor vessel head packages, reactor coolant pumps, the steam generators and the pressurizer units. In this study it is assumed that the steam generator units will be loaded onto a "schnabel type" railcar as they are removed. This car would be moved by a designated or "special train" containing only the steam generators and the other components such as the reactor coolant pumps, upper and lower vessel head packages, and the pressurizer. At the burial facility the generators would be off-loaded to an overland transporter for the final distance to the burial site.

4.3.3 Site Conditions at Facility Closeout

It is assumed that the site will be restored by regrading to conform to the adjacent landscape. Sufficient topsoil will be replaced to permit new growth of native vegetation. The intake and discharge structures on-site will be demolished and removed, the circulating water piping collapsed and the depressions backfilled.

4.4 ASSUMPTIONS

The following are the major assumptions made in the development of the cost estimates for the Crystal River Station, Unit 3.

1. Florida Power will use an outside contractor/AE in the decommissioning of Unit 3. The Decommissioning Operations Contractor (DOC) shall provide sufficient staff to perform the preparatory demolition planning and scheduling and manage the demolition efforts. Site security during demolition will be provided by Florida Power or its subcontractor. The demolition work will be performed by

9. Overland transport costs for the steam generators were based on discussions with Reliance Trucking of Phoenix, AZ. Rail shipping rates were obtained from the Norfolk & Southern Railway of Roanoke, VA.
10. Steam generators are loaded onto the railcar as they are removed from the Reactor Building.
11. Plant conditions & construction:
 - Insulation materials used throughout the station contain no asbestos.
 - Transformers and capacitors are certified to have PCB-free oil.
 - Pipe supports are distributed by system in proportion to the percentage of small, medium and large bore piping estimated in the system versus total installed piping in the station.
12. Crystal River Unit 3 will be isolated electrically from the rest of the transmission system and completely decommissioned (i.e., the station will be out of service prior to commencing the demolition effort).
13. Florida Power will furnish outside electrical power required to demolish the station.
14. Scrap generated during decommissioning is not included as a salvage credit line item in this study for two reasons: (1) the scrap value merely offsets the associated site removal and scrap reprocessing costs, and (2) a relatively low value of scrap exists in the market. Scrap processing and site removal costs are not included in the estimate.

The decommissioning will take place sufficiently far in the future that all equipment will be worn, obsolete and suitable for scrap as deadweight quantities only. No equipment will be salvageable as used equipment.
15. Florida Power will remove all items of furniture, tools, mobile equipment such as forklifts, trucks, bulldozers, other similar mobile equipment and other such items of personal property owned by Florida Power that is easily removed without the use of special equipment. That is, the cost for removal of such non-affixed items is not included in this decommissioning cost estimate.

16. The future Florida Power project team assigned to the decommissioning effort will investigate the economics of reusable construction materials.
17. Existing warehouses will remain for use by the demolition contractor and its subcontractors, as well as Florida Power.
18. All contaminated piping, components and structures other than the reactor vessel and internals are assumed to meet DOT limits for LSA material.
19. Fuel oil tanks will be emptied and tanks will be cleaned by flushing or steam cleaning as required to demolish in a safe manner.
20. Acid and caustic tanks will be emptied by normal usage.
21. Lubricating and transformer oils will be drained and removed from site by waste disposal vendor.
22. All above grade structures will be removed to 3 feet below the local grade level, i.e. the berm. Structures will be backfilled to grade level.
23. Water drain holes will be drilled in the bottom of all below grade structures to be abandoned by burial.
24. Piping and electrical manholes will be backfilled with a suitable earthen material and abandoned. Vertical pump structures and sumps will be backfilled with a suitable earthen material and abandoned.
25. Non-contaminated underground piping (except the intake, discharge, and circulating water piping) will be abandoned without special considerations. The plant intake and discharge circulating water piping will be removed and/ or collapsed and backfilled to eliminate the potential for collapse after the site is released for unrestricted access.
26. The station grounds will be planted with vegetable matter for erosion control and will have a final contour suitable for agricultural, range or timber uses.
27. The switchyard will be left intact for use by the balance of the utility's electrical transmission system.
28. Transmission towers will remain in place.

ATTACHMENT D

EXCERPTS FROM FEDERAL REGISTER/VOL. 53 NO. 123/

Monday, June 27, 1988/RULES AND REGULATIONS

1988-89 marketing order expenditures for Marketing Order Nos. 921, 922, and 924.

For Washington peaches, expenditures of \$18,378 and an assessment rate of \$2.25 per ton of peaches under M.O. 921 were recommended. In comparison, 1987-88 budgeted expenditures were \$25,136 and the assessment rate was \$2.00 per ton. On May 27, 1988, the Washington Peach Marketing Committee met and revised their assessment rate to \$1.20 per ton of peaches and revised the crop estimate. Assessment income for 1988-89 is estimated at \$14,040 based on the revised crop estimate of 11,700 tons of peaches. Committee reserves and other funds will be available to cover the anticipated \$4,338 deficit for 1988-89.

For Washington apricots, expenditures of \$6,970 and an assessment rate of \$2.25 per ton of apricots under M.O. 922 were recommended by the SFEMC. In comparison, 1987-88 budgeted expenditures were \$5,802 and the assessment rate was \$1.25 per ton. On May 27, 1988, the Washington Apricot Marketing Committee met and revised their assessment rate to \$2.00 per ton of apricots. Assessment income for 1988-89 is estimated at \$7,000 based on a crop estimate of 3,500 tons of apricots.

For Washington-Oregon prunes, expenditures of \$17,342 and an assessment rate of \$2.25 per ton of prunes under M.O. 924 were recommended by the SFEMC. In comparison, 1987-88 budgeted expenditures were \$29,462 and the assessment rate was \$3.00 per ton. On May 27, 1988, the Washington-Oregon Fresh Prune Marketing Committee met and revised their assessment rate to \$1.00 per ton of fresh prunes and revised the crop estimate. Assessment income for 1988-89 is estimated at \$9,300 based on the revised crop estimate of 9,300 tons of fresh prunes. Committee reserves and other funds will be available to cover the anticipated \$8,042 deficit for 1988-89.

While this final action will impose some additional costs on handlers, the costs are in the form of uniform assessments on all handlers. Some of the additional costs may be passed on to producers. However, these costs will be significantly offset by the benefits derived from the operation of the marketing orders. Therefore, the Administrator of the AMS has determined that this action will not have a significant economic impact on a substantial number of small entities.

This action adds new §§ 921.227, 922.227, and 924.228, and is based on committee recommendations and other

information. A proposed rule was published in the May 13, 1988, issue of the Federal Register (53 FR 17056). Comments on the proposed rule were invited from interested persons until May 23, 1988. Comments were received from the Washington Peach Marketing Committee, the Washington Apricot Marketing Committee, and the Washington-Oregon Fresh Prune Marketing Committee, in which they requested the establishment of revised assessment rates and/or crop estimates.

After consideration of the information and recommendations submitted by the committees, the comments received, and other available information, it is found that this final rule will tend to effectuate the declared policy of the Act.

These budgets and assessment rates should be expeditious because the committees need to have sufficient funds to pay their expenses, which are incurred on a continuous basis. In addition, handlers are aware of this action, which was recommended by the committees at public meetings. Therefore, the Secretary also finds that good cause exists for not postponing the effective date of this action until 30 days after publication in the Federal Register (5 U.S.C. 553).

List of Subjects in 7 CFR Parts 921, 922, and 924

Apricots, Marketing agreements and orders, Oregon, Peaches, Prunes, Washington.

For the reasons set forth in the preamble, new §§ 921.227, 922.227, and 924.228 are added as follows:

Note.—These sections will not appear in the Code of Federal Regulations.

1. The authority citation for 7 CFR Parts 921, 922, and 924 continues to read as follows:

Authority: Secs. 1-19, 48 Stat. 31, as amended; 7 U.S.C. 601.674.

2. New §§ 921.227, 922.227, and 924.228 are added to read as follows:

PART 921—FRESH PEACHES GROWN IN DESIGNATED COUNTIES IN WASHINGTON

§ 921.227 Expenses and assessment rate.

Expenses of \$18,378 by the Washington Fresh Peach Marketing Committee are authorized, and an assessment rate of \$1.20 per ton of assessable peaches is established for the fiscal year ending March 31, 1989. Unexpended funds may be carried over as a reserve.

PART 922—APRICOTS GROWN IN DESIGNATED COUNTIES IN WASHINGTON

§ 922.227 Expenses and assessment rate.

Expenses of \$6,970 by the Washington Apricot Marketing Committee are authorized, and an assessment rate of \$2.00 per ton is established for the fiscal year ending March 31, 1989. Unexpended funds may be carried over as a reserve.

PART 924—FRESH PRUNES GROWN IN DESIGNATED COUNTIES IN WASHINGTON AND UMATILLA COUNTY, OREGON

§ 924.228 Expenses and assessment rate.

Expenses of \$17,342 by the Washington-Oregon Fresh Prune Marketing Committee are authorized, and an assessment rate of \$1.00 per ton of assessable prunes is established for the fiscal year ending March 31, 1989. Unexpended funds may be carried over as a reserve.

Dated: June 22, 1988.

William J. Doyle,

Associate Deputy Director, Fruit and Vegetable Division, Agricultural Marketing Service.

[FR Doc. 88-14373 Filed 6-24-88 8:45 am]

BILLING CODE 3410-07-M

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 30, 40, 50, 51, 70, and 72

General Requirements for Decommissioning Nuclear Facilities

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission is amending its regulations to set forth technical and financial criteria for decommissioning licensed nuclear facilities. The amended regulations address decommissioning planning needs, timing, funding methods, and environmental review requirements. The intent of the amendments is to assure that decommissioning of all licensed facilities will be accomplished in a safe and timely manner and that adequate licensee funds will be available for this purpose. The final rule also contains a response to a petition for rulemaking (PRM-50-22), concerning decommissioning financial assurance, initially filed by the Public Interest

Research Group (PIRG), et al. on July 5, 1977.

EFFECTIVE DATE: July 27, 1988.

FOR FURTHER INFORMATION CONTACT: K. Steyer, C. Feldman, or F. Cardile, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 492-3824.

SUPPLEMENTARY INFORMATION:

Introduction

The NRC is amending its regulations to provide specific requirements for the decommissioning of nuclear facilities. Specifically the regulations establish criteria in the following areas: Acceptable decommissioning alternatives; planning for decommissioning; assurance of the availability of funds for decommissioning; and environmental review requirements related to decommissioning.

Decommissioning as defined in the rule means to remove nuclear facilities safely from service and to reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of the license. Decommissioning activities are initiated when a licensee decides to terminate licensed activities.

Decommissioning activities do not include the removal and disposal of spent fuel which is considered to be an operational activity or the removal and disposal of nonradioactive structures and materials beyond that necessary to terminate the NRC license. Disposal of

nonradioactive hazardous waste not necessary for NRC license termination is not covered by these regulations but would be treated by other appropriate agencies having responsibility over these wastes. If nuclear facilities are to be reused for nuclear purposes, applications for license renewal or amendment or for a new license are submitted according to the appropriate existing regulation. Reuse of a nuclear facility for other nuclear purposes is not considered decommissioning because the facility remains under license.

These amendments apply to the decommissioning of power reactors, nonpower reactors, fuel reprocessing plants, fuel fabrication plants, uranium hexafluoride production plants, independent spent fuel storage installations, and nonfuel-cycle nuclear facilities. The decommissioning of uranium mills and mill tailings, low-level waste burial facilities, and high-level waste repositories, has been treated in separate regulatory actions. These amendments apply to nuclear facilities that operate through their normal

lifetime, as well as to those that may be shut down prematurely.

The purpose of these amendments is to assure that decommissionings will be carried out with minimal impact on public and occupational health and safety and the environment. The Commission's objective is that decommissioned facility sites would ultimately be available for unrestricted use for any public or private purpose. The amendments provide a regulatory framework for more efficient and consistent licensing actions related to decommissioning. Although decommissioning is not an imminent health and safety problem, the nuclear industry is maturing, in that nuclear facilities have been operating for a number of years, and the number and complexity of facilities that will require decommissioning is expected to increase in the near future. Inadequate or untimely consideration of decommissioning, specifically in the areas of planning and financial assurance, could result in significant adverse health, safety and environmental impacts. These impacts could lead to increased occupational and public doses, increased amounts of radioactive waste to be disposed of, and an increase in the number of contaminated sites. The regulations make clear that the licensee is responsible for the funding and completion of decommissioning in a manner which protects public health and safety. Current regulations cover the requirements and criteria for decommissioning in a limited way and are not fully adequate to deal with licensee decommissioning requirements effectively. Many licensing activities concerning decommissioning have had to be determined on a case-by-case basis. This procedure results in inconsistency in dealing with licensees and in inefficient and unnecessary administrative effort. With the increased number of decommissionings expected, case-by-case procedures would make licensing difficult and increase NRC and licensee staff resources needed for these activities.

Background

On March 13, 1978, the Commission published an Advance Notice of Proposed Rulemaking in the Federal Register (43 FR 10370) stating that the Commission was reevaluating its decommissioning policy and considering amendments to its regulations to provide more specific requirements relating to the decommissioning of nuclear facilities. The plan for the reevaluation included the development of an information base, the preparation

of a generic environmental impact statement (GEIS), and based on these, the development of amendments to the regulations. The information base for preparation of the final rule is complete and consists primarily of a series of NUREG/CR reports on studies of the technology, safety, and costs of decommissioning various kinds of nuclear facilities. These reports were prepared by Battelle Pacific Northwest Laboratories (PNL).¹ In addition, preliminary staff positions on the major decommissioning issues have been presented in staff (NUREG) reports. On February 10, 1981, the Commission announced the availability of the draft GEIS for public comment (46 FR 11666). Section 15 of the draft GEIS contains certain policy recommendations. These recommendations, as modified by comments received on the draft GEIS and other sources, provided the basis for the proposed amendments to the Commission's regulations.

On February 11, 1985, the Commission published a Notice of Proposed Rulemaking on Decommissioning Criteria for Nuclear Facilities (50 FR 5600). The proposed amendments covered a number of topics related to decommissioning that would be applicable to 10 CFR Parts 30, 40, 50, 70, and 72 applicants and licensees. The original comment period was due to expire May 13, 1985, but was extended to July 13, 1985 to accommodate requests from interested parties for an extended comment period in order to fully evaluate the issues raised and develop comments on the proposed rule. Public comments received on the proposed rule were docketed and may be examined at the Commission's Public Document Room located at 1717 H Street NW., Washington, DC.

Acceptable levels of residual radioactivity for release of property for unrestricted use were not proposed as part of this rulemaking. Commission staff is participating in an interagency working group, organized by the Environmental Protection Agency (EPA), developing Federal guidance on this subject. Proposed Federal guidelines are anticipated to be published by EPA and EPA has issued an advance notice of proposed rulemaking (51 FR 22264, June 18, 1986). In the interim, NRC is developing interim guidance with respect to residual contamination criteria.

¹ A bibliography of the PNL and NRC staff reports and other background documents is included at the end of the supplementary information. These documents are available for inspection and copying for a fee in the Commission's Public Document Room at 1717 H Street NW., Washington, DC 20555.

ATTACHMENT E

EXCERPTS FROM TRANSCRIPT OF DEPOSITION OF
THOMAS LAGUARDIA - JANUARY 11, 1989

FLORIDA PUBLIC SERVICE COMMISSION

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IN RE: :

PETITION OF FLORIDA POWER & :

LIGHT COMPANY for an Increase :

in the Annual Accrual for Turkey : Case No.

Point Units Nos. 3 and 4 : 870098-EI

Decommissioning Costs. :


----- X

DEPOSITION OF THOMAS LAGUARDIA

January 11, 1989

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Group, Inc.111 Gillett Street
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1 the DOC?

2 A. The DOC. The company's overhead, meaning
3 Florida Power & Light and Florida Power
4 Corporation, their overhead is not included in the
5 unit cost factors. Their overhead only applies to
6 the utility staff of the station manager on down
7 through the janitor, not to any of the crew
8 personnel, any of the field personnel performing
9 hands-on removal activities.

10 Q. Based on no future unseen major problems
11 at the Crystal River site, what is the anticipated
12 radiation level at the time of the cessation of
13 commercial operations of, A, the turbine building;
14 B, the control complex; C, heater bay; D, shop
15 facilities; E, warehouse; and F, technical support
16 center?

17 A. Essentially we are estimating no
18 contamination of those areas. There may be
19 individual components that are located in the
20 turbine building that are radioactive, and there
21 could be some local contamination on the floor
22 surrounding those components, but in general, I'd
23 say those buildings are generally clean buildings.
24 We have not assumed any high radiation level or
25 any radiation level other than background, of

1 course, but even in this area there would be no
2 background level for any of those components, or
3 areas of the buildings, I should say.

4 Q. So they won't require any decontamination?

5 A. They should not require any
6 decontamination, assuming it doesn't change over
7 the life of plant, which is a fairly large
8 assumption.

9 (Off the record discussion.)

10 BY MR. CHRIST:

11 Q. Of the DOC staff doing the
12 decommissioning work, please describe the makeup
13 of the crew that removes and packages the steam
14 generator and the internals.

15 A. To begin with, when we refer to the "decon"
16 staff, those are management personnel. They don't
17 do any hands-on work per se. They are not allowed
18 to under the union rules. So it's the crew that
19 performs the work.

20 The Turkey Point and St. Lucie, I believe
21 we provided NSSS spread sheets. We have spread
22 sheets that show the breakdown of the crew.
23 Basically we are looking at laborers, craftsmen
24 and foremen to actually perform the hands-on
25 disassembly operation. They cut the steam

1 A. No. In the past we have been fully
2 escorted by one of the plant personnel.

3 Q. These three studies?

4 A. In the three studies, and it's a one-day --
5 it's really about a four-hour walk-through, mostly
6 to orient ourselves as to where the buildings are,
7 how they are laid out, any unique features that we
8 have to take into account when we look at the
9 drawings. When you are doing the type of estimate
10 that you are looking for, it means walking down
11 every line, and that takes an extensive amount of
12 time.

13 MR. BONAVIDA: Can you do that with
14 the plant operating? You have to wait for a
15 shutdown?

16 THE WITNESS: You have to wait.
17 Some of the buildings will be inaccessible because
18 they are sealed off during plant operations. You
19 would have to catch it at a shutdown. That's the
20 worst time you want to go through a power plant.
21 That's the time nobody wants you there.

22 BY MR. CHRIST:

23 Q. Could you automatically exclude those as
24 being contaminated?

25 A. No. Some of the plants are not. Some of

1 the parts of it, the reactive building itself, are
2 not contaminated. There may be only small
3 restricted areas, but in order to do a reasonable
4 accounting of those differences, you need to get
5 access to those areas. I don't know. I don't
6 think that's a reasonable assumption to make, just
7 to say it's automatically contaminated.

8 MR. SEYMORE: I think there's going
9 to be a significant support function of the
10 utility. Some of these areas you are not going to
11 get in without an HP escort with you, and you will
12 probably have to take, to answer the question
13 whether they are contaminated, you may have to
14 take smears on the surface, like cable trays and
15 that, because we really don't know by looking and
16 you can't do it with a "mete", which most plants
17 will not let you carry one if you are not HP
18 qualified. We would have to bring our own or they
19 would provide them for us. There's another cost
20 involved there.

21 THE WITNESS: Just to give you -- we
22 have done some crude studies of contaminated and
23 noncontaminated, but the collateral costs that are
24 associated, maybe it's 15 percent of the total
25 cost -- as the cascading costs, I'm sorry. Maybe

ATTACHMENT F

**85 PUR 4TH P 373. PENNSYLVANIA PUBLIC UTILITY
COMMISSION V PENNSYLVANIA POWER CO.**

RE AT&T COMMUNICATIONS OF THE PACIFIC NORTHWEST

WAC Chapter 480-140
WAC Chapter 480-143
WAC Chapter 480-146

(budgets)
(transfers of property)
(securities and affiliated interests)

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission

v.

Pennsylvania Power Company

R-850267

Additional complainants: Office of Consumer Advocate of Pennsylvania, R-850267C001; Borough of Enon Valley, R-850267C002; Sharon Steel Corporation, R-850267C004; and Liquid Air Corporation, R-850267C005 et al.

Intervenor: Hospital Council of Western Pennsylvania

July 16, 1987

APPPLICATION for authority to increase rates for electric distribution service; order issued requiring rate decrease and disallowing all construction costs concerning Perry Unit 1 nuclear generating plant.

1. Valuation, § 192 — Rate base allowance — Electric generating plant — Criteria.

[PA.] Before a newly completed electric generating plant may be included in rates, it must satisfy several legal prerequisites: (1) Achievement of "commercial operation" within a specified period of time, (2) proof that all claimed construction costs were prudently incurred, necessary, and proper, and (3) proof that the additional power from the plant does not constitute excess capacity.

2. Valuation, § 193 — Property used and useful — Commercial operation — In service — Definitions — Electric generating plants.

[PA.] The criteria for determining when a new nuclear electric generating plant will be deemed to be "in service" or in "commercial operation," is as follows: The

start-up testing program shall be successfully completed, including a successful uninterrupted run of at least 100 hours during which time power is furnished to the grid at a level between 95% and 100%.

3. Valuation, § 234 — Property used and useful — Plant out of service — Electric generating plant — Rate-making options.

[PA.] When a base load electric generating plant is out of service at the time that the commission makes its final decision in the case in which the unit's costs are first claimed by an electric utility to be eligible for rate recovery, the commission, under state law, 66 Pa.C.S. § 1323(b), must make either of two rate-making adjustments: (1) Exclude from rates all costs associated with the unit, or (2) require the utility to guar-

PENNSYLVANIA PUBLIC UTILITY COMMISSION

an assumed 7½% tax-free interest allowance to account for prospective earnings on deposits made in the escrow accounts for each plant. The Company did not, however, reflect any allowance for inflation as it is the intention of the CAPCO companies to periodically update the decommissioning studies and reflect any changes in cost levels and decommissioning technology in future rate proceedings. The Company's claim for decommissioning expense reflects current state-of-the-art decommissioning technology, assumes compliance with all applicable state and federal regulations and is, in the Company's opinion, reasonable and should be accepted.

OCA witness Larkin proposed to adjust the Company's decommissioning expense claims; based *only* on the prompt removal/dismantling of *radioactive facilities*.

Mr. Larkin's adjustments were calculated using the cost estimates for decommissioning the *radioactivity* contaminated facilities at both Beaver Valley 1 and Perry 1 appearing in the TLG studies. These calculations produced the following adjustments: First, decommissioning expense for Penn Power's share of Beaver Valley 1 and common facilities should be reduced by \$100,892 to \$245,291. Second, decommissioning expense for Penn Power's share of Perry 1 and one-half of common facilities should be reduced by \$17,299 and \$34,692. Mr. Larkin noted that in its current rate proceeding at R-860378, Duquesne Light Company has calculated its decommissioning expense claim for the identical plants in the same manner proposed by Mr. Larkin, *i.e.*, based on the TLF studies' cost estimates for dismantling radioactive facilities *only*.

OTS witness Martin J. Mayer has also

recommended that these same adjustments be made to the Company's claim.

OTS witness Martin J. Mayer has also recommended a reduction to the Company's claimed decommissioning accrual to reflect a six year extension in the operating license for Beaver Valley 1. The basis for this adjustment is that Duquesne Light Co. has filed an application with the NRC for such an extension and that license extensions have been granted in the past to other plants.

Penn Power contends that the non-nuclear decommissioning expense adjustment proposed by the OTS and the OCA is unrealistic as it does not accurately reflect the total decommissioning costs which Penn Power will incur. In this regard, Mr. LaGuardia testified:

"In my opinion there is little doubt that utilities will ultimately be required to decommission all nuclear power plant facilities and not simply those which have been directly exposed to radioactive materials. After completion of decommissioning these facilities (*i.e.*, removing all radioactivity and terminating the license), it is unlikely that the remaining structures could be utilized in their existing form. The economics of backfitting a large fossil-fuel fired steam generator to the existing Beaver Valley turbine and condensate systems have not been satisfactorily demonstrated. For Perry, it would probably require the replacement of the existing turbine and condensate system because they will have been removed as contaminated equipment. If these facilities were allowed to lay dormant, the potential for an intruder to be injured on-site is very great. In this regard, it should be noted that the Ohio Basic Building Code requires that all 'Unsafe Buildings' (Section 4101:2-1-39) be razed. Similarly, Section 120.0 of the

PA. PUC v. PENNSYLVANIA POWER CO.

BOCA Basic/National Building Code of 1984, which I understand has been adopted in Pennsylvania, requires that 'Unsafe Structure' be taken down. A vacant building, unguarded or open at door or window is considered a fire hazard and unsafe within the meaning of the code. Guarding such a structure would be the equivalent of mothballing the facility at costs similar to those presented in the Perry and Beaver Valley studies. Accordingly, the most assured method of protecting the public would be dismantling all remaining structures following the removal of those exposed to radioactivity."

Mr. LaGuardia estimated that it would cost approximately \$213,000 for Beaver Valley 1 in 1984 dollars and \$248,000 for Perry 1 in 1985 dollars, on an annual basis, to secure and maintain nonradioactive structures in accordance with applicable building laws if these structures are not promptly dismantled. This would result in a total liability in constant dollars over a 30-year period of \$6.390 million for Beaver Valley and \$8.440 million for Perry, which, under Messrs. Larkin's and Mayer's proposal, would have to be recovered from ratepayers after these plants cease operations.

The Company contends that it would be unreasonable for future ratepayers to assume this significant burden without receiving the benefits associated with the operation of each plant. Under the Company's proposal, the costs to decommission all noncontaminated structures would be spread over the useful life of each plant, thereby achieving a much more equitable balance between generations of ratepayers.

Certain costs would also be incurred to remove or dismantle a substantial amount of noncontaminated facilities

simply to gain access to radioactive areas, and, therefore, these costs are a necessary plan unavoidable part of the decommissioning of each plant.

Penn Power also states that the total costs to decommission radioactively contaminated facilities, including certain required noncontaminated structure, would equal approximately 78% of the total cost to decommission Beaver Valley 1 and 75% of the total cost estimate for Perry 1. Utilizing these revised estimates under the Company's methodology would result in a total jurisdictionalized decommissioning expense of \$265,332 for Beaver Valley 1 and \$38,760 for Perry 1.

OTS witness Mayer also proposed that the Company's decommissioning expense allowance be calculated under the Equal Purchasing Power Method. In effect, the only difference between this method and that employed by the Company is that Mr. Mayer employs a 2.62% annual inflation rate in calculating the annual depreciation accrual instead of the 0% rate assumed in the Company's analysis. The Company does not strongly oppose this methodology, although its adoption would result in an increase in the Company's revenue requirement.

The ALJ recommended that the OCA's adjustment be adopted essentially based upon his analysis of prior Commission decisions on this issue.

Penn Power excepted as follows to the ALJ's recommendation:

"The most egregious omission in the Recommended Decision is the ALJ's failure to address any of the uncontested direct or rebuttal testimony submitted by Penn Power which demonstrates that it is appropriate to allow the costs to decommission both radioactive and non-radioactively contami-