

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
FLORIDA POWER AND LIGHT COMPANY)	Docket Nos. 50-250
(Turkey Point Nuclear Generating)	50-251
Unit Nos. 3 and 4))	(Proposed Amendments to Facility
)	Operating Licenses to Permit
)	Steam Generator Repair)

AFFIDAVIT OF MARSHALL GROTENHUIS ON
LOW-LEVEL SOLID WASTE MANAGEMENT

I, Marshall Grotenhuis, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Senior Project Manager in the Division of Licensing, Office of Nuclear Reactor Regulation.

2. I am the Project Manager assigned to the Turkey Point Plant steam generator repair program.

3. The Board, in its Memorandum and Order of May 28, 1981 requested "detailed information concerning the handling, storage, transportation or other disposition of low level solid waste that may be produced at the Turkey Point Facility as a result of the proposed steam generator repairs." Order at 42. The Board expressed a particular interest in the onsite storage of low-level solid waste in drums, a subject introduced in affidavits which accompanied the Intervenor's response to the Staff's final summary disposition motion. The Board also directed the parties to "state their positions as to whether the Board can or should take any action regarding solid waste resulting from steam generator repairs at Turkey Point, including the imposition of license amendment conditions." Order at 43. The Staff position on this matter follows.



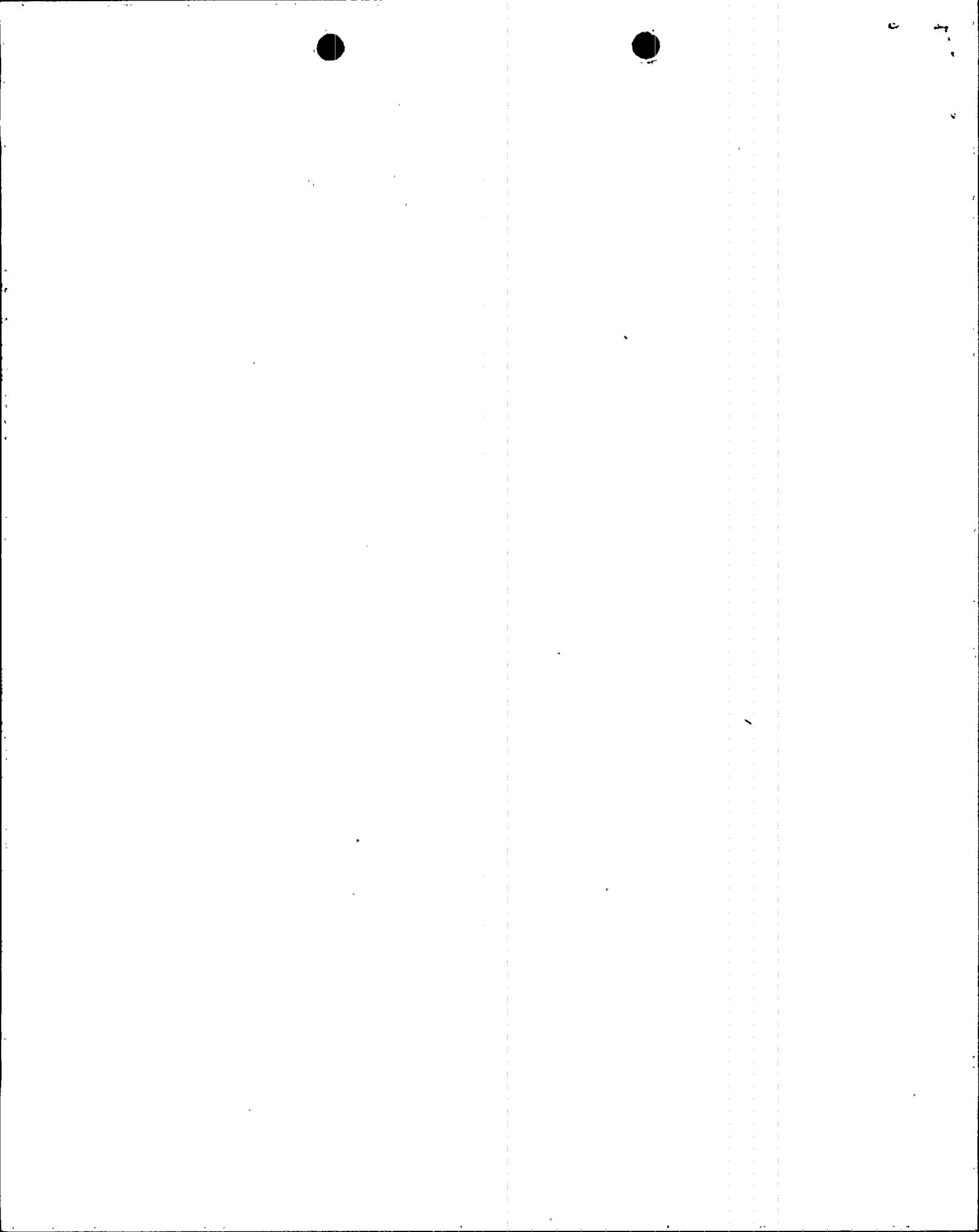
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4. The handling, storage, transportation or other disposition of low-level solid waste from the steam generator repair will be the same as the processing of such waste during normal operation. Indeed, with the unit under repair not producing waste from normal operation, the total waste from the plant (two units) is approximately the same during repair as during normal two unit operation. (FES, §4.1.2.2).

5. This waste, in the form of gloves, clothing, rags, etc. will be stored in large drums or steel lined crates. However, contrary to the position taken in the affidavits accompanying the Intervenor's response to the Staff motion for summary disposition of Contention 4B, the onsite storage does not pose an undue risk to the health and safety of the public, even in the event of a hurricane or tornado at the site. In fact, the potential offsite radiological consequences were the drums to be somehow breached, are within permissible levels.

6. It is true that hurricanes and/or tornados may blow the solid waste storage drums and could damage them. Man-made errors can do the same. Our accident analysis (FES, Section 4.4 and 8.6.5) considered a range of accidents and enumerated only the limiting cases. However, if we were to consider the waste storage in an extremely conservative accident (over estimated), we would have:

	270 Curies	(maximum amount from the repair of one unit)
X	$\frac{1}{33.5}$	(ratio of activity in drums to the activity released from the SGLA drop)
X	$\frac{1}{100}$	(ratio of meteorological condition from "average" to "stormy" weather)
X	15 mrem.	(dose at the site boundary from SGLA drop)
=	1.5 mrem	



This is the site boundary dose due to all the low-level solid waste from one unit repair being released in one accident. This is clearly an overestimate and is clearly bounded by the SGLA breach accident, the limiting accident for purposes of evaluation.

7. Similarly, should we postulate the release of all this same waste in one accident and have it wash into the canals, the concentration would be:

$$\begin{aligned} & 270 \text{ Curies} && \text{(maximum amount from the repair} \\ & \times \frac{10^3}{7 \times 10^8 \text{ ft}^3} && \text{of one unit)} \\ & \times 10^6 \text{ uCuries/curie} && \text{(volume of canal)} \\ & \times \frac{1}{(30.5)^3} \frac{\text{ft}^3}{\text{cm}^3} \\ & = 1.4 \times 10^{-5} \frac{\text{ucuries}}{\text{cm}^3} \end{aligned}$$

This is within 10 CFR Part 20 Appendix B standards for drinking water. In the Staff affidavit of Richard B. Codell on contention 4A, it was concluded that such radioactivity from the SGLA breach would be discovered by the well monitoring program long before the radioactive ground water would escape into the environment.

8. The problem of low-level waste disposal is a generally acknowledged problem that has been delegated to the States with the Department of Energy as the lead agency to prepare a preliminary assessment pertaining to the development of regional sites. (see FES, Section 8.6.9).

9. The steam generator lower assemblies presented a different problem and thus were treated independently (FES, §4.1.2.3). We



evaluated several possibilities and concluded that either offsite shipment and burial (FES, Appendix C) or onsite storage (FES §5.5) were equally acceptable. As far as low-level waste is concerned, this does add an additional 270 m³ and 750 Ci more per unit. The onsite storage option would eventually (30 years) reduce the activity to less than one percent (~6 Ci). In terms of the eventual decommissioning of the reactors, both the volume and the activity would be a small portion of the total plant.

10. The Applicant has been improving the volume reduction aspect of the low level waste packaging process. Data from the past few years indicates the magnitude of the improvement. The actual low level waste volume* from the Turkey Point Plant Unit No. 3 and 4 has been as follows:

<u>Year</u>	<u>Volume</u>	<u>Barnwell limit</u>
1978	62,000 ft ³	1750m ³
1979	32,000	900
1980	26,000	740
1981	22,000**	620 (estimated)
		790m ³
		680m ³

11. In summary, the handling, storage, transportation or other disposition of low-level wastes (other than the steam generator lower assemblies) will be at about the same rate and in the same manner as for normal operation of the two facilities. Handling of low level waste will be by the same procedures and facilities as for normal operation. Storage

* This does not include about 1300 drums (270m³) of contaminated dirt.

** Repair volume (estimated at 1100 m³ per unit without most recent compacting gains) is not included.



until transported will be the same. Transportation will be controlled by the same Department of Transportation controls. Recently the Applicant has been able to improve the reducing and compacting operation and reduce the volume of the waste. In addition, the waste container with the highest activity may be shipped first. Thus, even though the volume problem may remain, the total activity in storage could be minimized.

12. The Staff does not believe that the public health and safety necessitates the imposition of any license amendment conditions concerning the onsite storage of low-level solid waste generated as a result of the proposed repairs.


Marshall Grozenhuis

Subscribed and sworn to before me this 9th day of


Marilyn Jallerton
Notary Public

My Commission expires: July 1, 1982

