



TO: PNSC

DATE:

PTN-NC-92-077

Dec. 8, 1992

FROM: J. E. Berg

DEPARTMENT:

Nuclear Chemistry

SUBJECT: Off Site Dose Calculation Manual

Attached is the revised version of Appendix C of the Off Site Dose Calculation Manual. Appendix C describes the Radiological Environmental Monitoring Program. This revision is the result of the modifications made due to hurricane Andrew and is summarized below.

1. Direct Radiation via TLD's

TLD's were relocated to closest available siren pole, if possible.

Location names were changed to reflect sector and approximate distance in miles to the plant.

2. Air Sampling

One location moved, site T-51, to the entrance of Homestead Bayfront Park.

Added one more alternate sample point, T-71, at Red Barn area in the event T-51 is lost/stolen. With this addition, the two sample sites not on FPL owned property have alternate sites.

3. Revised Maps

Changed maps describing monitoring locations.

|                       |                    |      |         |
|-----------------------|--------------------|------|---------|
| PNSC<br>APPROVAL      | <i>[Signature]</i> | DATE | 12/8/92 |
| PLT. MGR.<br>APPROVAL | <i>[Signature]</i> | DATE | 12/8/92 |

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**APPENDIX C**  
**RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE**

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**APPENDIX C**  
**RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE**  
**TURKEY POINT PLANT**  
**Key to Sample Locations**

It is the policy of Florida Power and Light Company (FPL) that the Turkey Point 3 and 4 and St. Lucie 1 and 2 Radiological Environmental Monitoring Programs are conducted by the State of Florida Department of Health and Rehabilitative Services (HRS), pursuant to an Agreement between FPL and HRS and; that coordination of the Radiological Environmental Monitoring Programs with HRS and compliance with the Radiological Environmental Monitoring Program Technical Specifications are the responsibility of the Nuclear Division Health Physics/Chemistry Staff.



RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE  
TURKEY POINT PLANT  
Key to Sample Locations

| Pathway          | Location | Description   | Samples Collected | Sample Collection Frequency | Approx. Distance (miles) | Direction Sector |
|------------------|----------|---|-------------------|-----------------------------|--------------------------|------------------|
| Direct Radiation | N-2      | Convoy Point  | TLD               | Quarterly                   | 2                        | N                |
| Direct Radiation | N-7      | Black Point Marina parking lot on siren pole              | TLD               | Quarterly                   | 7                        | N                |
| Direct Radiation | N-10     | Old Cutler Rd across from Perdue Med. Ctr. on siren pole. | TLD               | Quarterly                   | 10                       | N                |
| Direct Radiation | NNW-2    | East end of N. Canal Dr. on siren pole E. of 117th Ave.   | TLD               | Quarterly                   | 2                        | NNW              |
| Direct Radiation | NNW-10   | Bailes Rd. E. of US 1 on siren pole.                      | TLD               | Quarterly                   | 10                       | NNW              |
| Direct Radiation | NW-1     | Turkey Point Entrance Rd                                  | TLD               | Quarterly                   | 1                        | NW               |
| Direct Radiation | NW-5     | Intersection of Mowry Dr. & 117th Ave. on siren pole.     | TLD               | Quarterly                   | 5                        | NW               |



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|------------------|----------|---|-------------------|-----------------------------|--------------------------|------------------|
| Direct Radiation | NW-10    | On Newtown Rd. N. of Coconut Palm Drive on siren pole.                | TLD               | Quarterly                   | 10                       | NW               |
| Direct Radiation | W-5      | Palm Drive 0.3 mi. west of Tallahassee Rd.                            | TLD               | Quarterly                   | 5                        | W                |
| Direct Radiation | WNW-10   | NW 2nd Ave. S. of Campbell Dr. at Hmstd. Middle School on siren pole. | TLD               | Quarterly                   | 10                       | WNW              |
| Direct Radiation | W-1      | On site north side of Discharge Canal.                                | TLD               | Quarterly                   | 1                        | W                |
| Direct Radiation | W-9      | Card Sound Rd. 0.6 mi. SSE of US 1 on siren pole.                     | TLD               | Quarterly                   | 9                        | W                |
| Direct Radiation | WSW-8    | Card Sound Rd. 3.4 mi. SSE of US 1 on siren pole.                     | TLD               | Quarterly                   | 8                        | WSW              |



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|------------------|----------|--|-------------------|-----------------------------|--------------------------|------------------|
| Direct Radiation | SW-1     | On site near land utilization offices                          | TLD               | Quarterly                   | 1                        | SW               |
| Direct Radiation | SW-8     | Card Sound Rd. 5 mi. SSE of US 1 at entrance to Navy facility. | TLD               | Quarterly                   | 8                        | SW               |
| Direct Radiation | SSW-5    | On site, southwest corner of cooling canals                    | TLD               | Quarterly                   | 5                        | SSW              |
| Direct Radiation | SSW-10   | At Card Sound Bridge on siren pole.                            | TLD               | Quarterly                   | 10                       | SSW              |
| Direct Radiation | S-5      | On site, south east end of cooling canals.                     | TLD               | Quarterly                   | 5                        | S                |
| Direct Radiation | S-10     | Card Sound Road at Steamboat Creek.                            | TLD               | Quarterly                   | 10                       | S                |



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| Pathway                     | Location | Description                         | Samples Collected           | Sample Collection Frequency | Approx. Distance (miles) | Direction Sector |
|-----------------------------|----------|-------------------------------------|-----------------------------|-----------------------------|--------------------------|------------------|
| Direct Radiation            | SSE-1    | Turtle Point                        | TLD                         | Quarterly                   | 1                        | SSE              |
| Direct Radiation            | SSE-10   | Ocean Reef                          | TLD                         | Quarterly                   | 10                       | SSE              |
| Direct Radiation            | NNE-22   | Natoma Substation                   | TLD                         | Quarterly                   | 22                       | NNE              |
| Airborne                    | T51      | Entrance to Homestead Bayfront Park | Radioiodine and Particulate | Weekly                      | 2                        | NNW              |
| Airborne (Alternate to T51) | T71      | Red Barn / Beach Area               | Radioiodine and Particulate | Weekly                      | 0.5                      | NNE              |
| Airborne                    | T57      | Tree Nursery 316th Street           | Radioiodine and Particulate | Weekly                      | 4                        | NW               |
| Airborne (Alternate to T57) | T52      | Florida City Substation             | Radioiodine and Particulate | Weekly                      | 7                        | W                |
| Airborne                    | T58      | Turkey Point Entrance Rd            | Radioiodine and Particulate | Weekly                      | 1                        | NW               |



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| Pathway    | Location | Description   | Samples Collected           | Sample Collection Frequency | Approx. Distance (miles) | Direction Sector |
|------------|----------|---|-----------------------------|-----------------------------|--------------------------|------------------|
| Airborne   | T64*     | Natoma Substation   | Radioiodine and Particulate | Weekly                      | 22                       | NNE              |
| Airborne   | T72      | Turkey Point Land Utilization Entrance                                | Radioiodine and Particulate | Weekly                      | <1                       | WSW              |
| Waterborne | T42      | Biscayne Bay, at Turkey Point   | Surface Water               | Monthly                     | <1                       | ENE              |
|            |          |   | Shoreline Sediment          | Semi-annually               |                          |                  |
| Waterborne | T67*     | Biscayne Bay, vicinity of Cutler Plant north to Matheson Hammock Park | Surface Water               | Monthly                     | 13-18                    | N,NNE            |
|            |          |   | Shoreline Sediment          | Semi-annually               |                          |                  |
| Waterborne | T81      | Card Sound, near mouth of old discharge canal                         | Surface Water               | Monthly                     | 6                        | S                |
|            |          |   | Shoreline Sediment          | Semi-annually               |                          |                  |

\* Denotes control sample.



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| Pathway       | Location | Description   | Samples Collected     | Sample Collection Frequency | Approx. Distance (miles) | Direction Sector |
|---------------|----------|---|-----------------------|-----------------------------|--------------------------|------------------|
| Food Products | T67*     | Biscayne Bay, vicinity of Cutler Plant north to Matheson Hammock Park | Crustacea             | Semi-annually               | 13-18                    | N, NNE           |
|               |          |   | Fish                  | Semi-annually               |                          |                  |
| Food Products | T81      | Card Sound near mouth of old Discharge Canal.                         | Crustacea             | Semi-annually               | 6                        | S                |
|               |          |   | Fish                  | Semi-annually               |                          |                  |
| Food Products | T40      | South of Palm Dr. on SW 117th St extension                            | Broad leaf vegetation | Monthly                     | 3                        | W                |
| Food Products | T41      | Palm Dr. West of FPL wellness center near the site boundary           | Broad leaf vegetation | Monthly                     | 2                        | WNW              |

\* Denotes control sample.

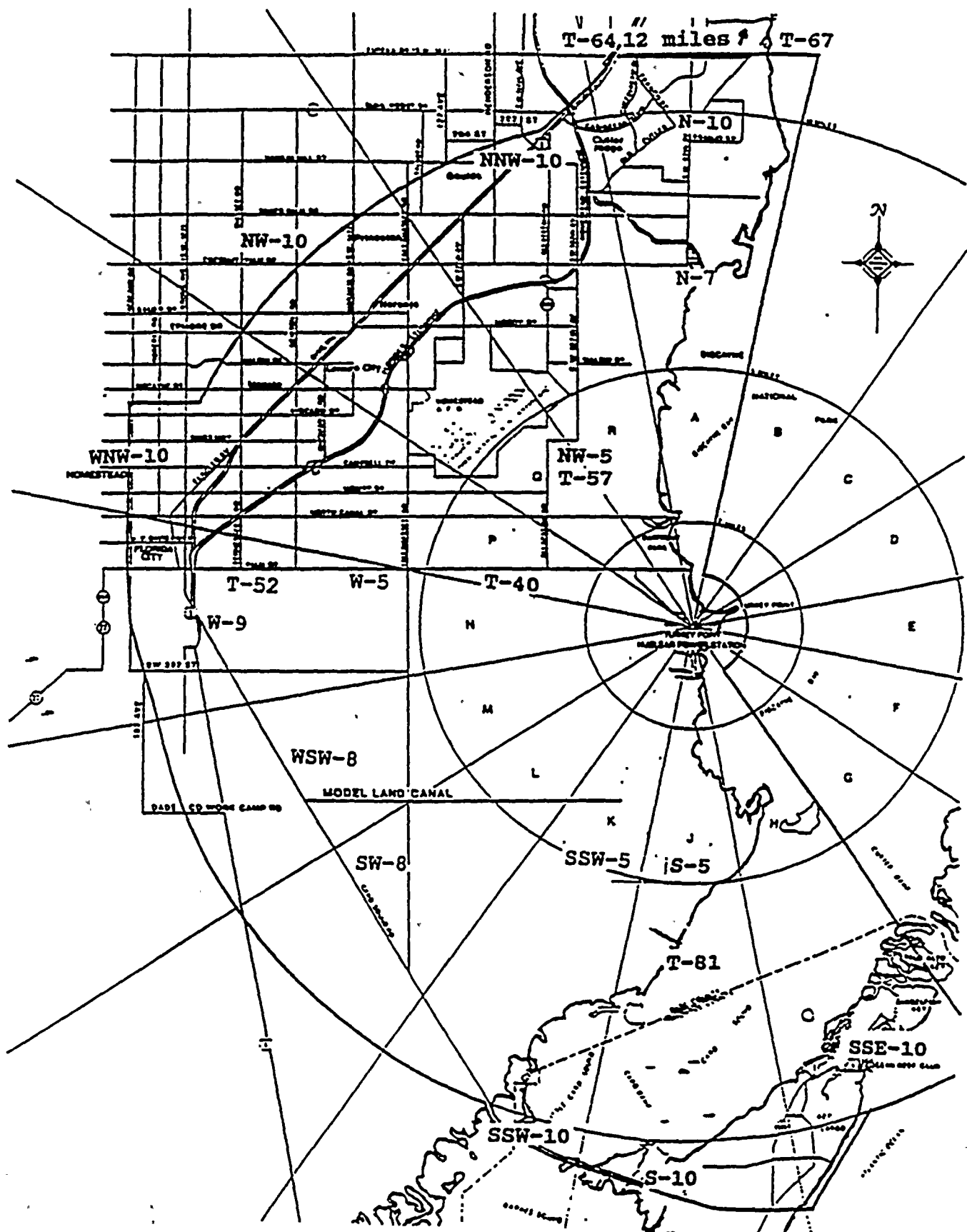


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TURKEY POINT PLANT  
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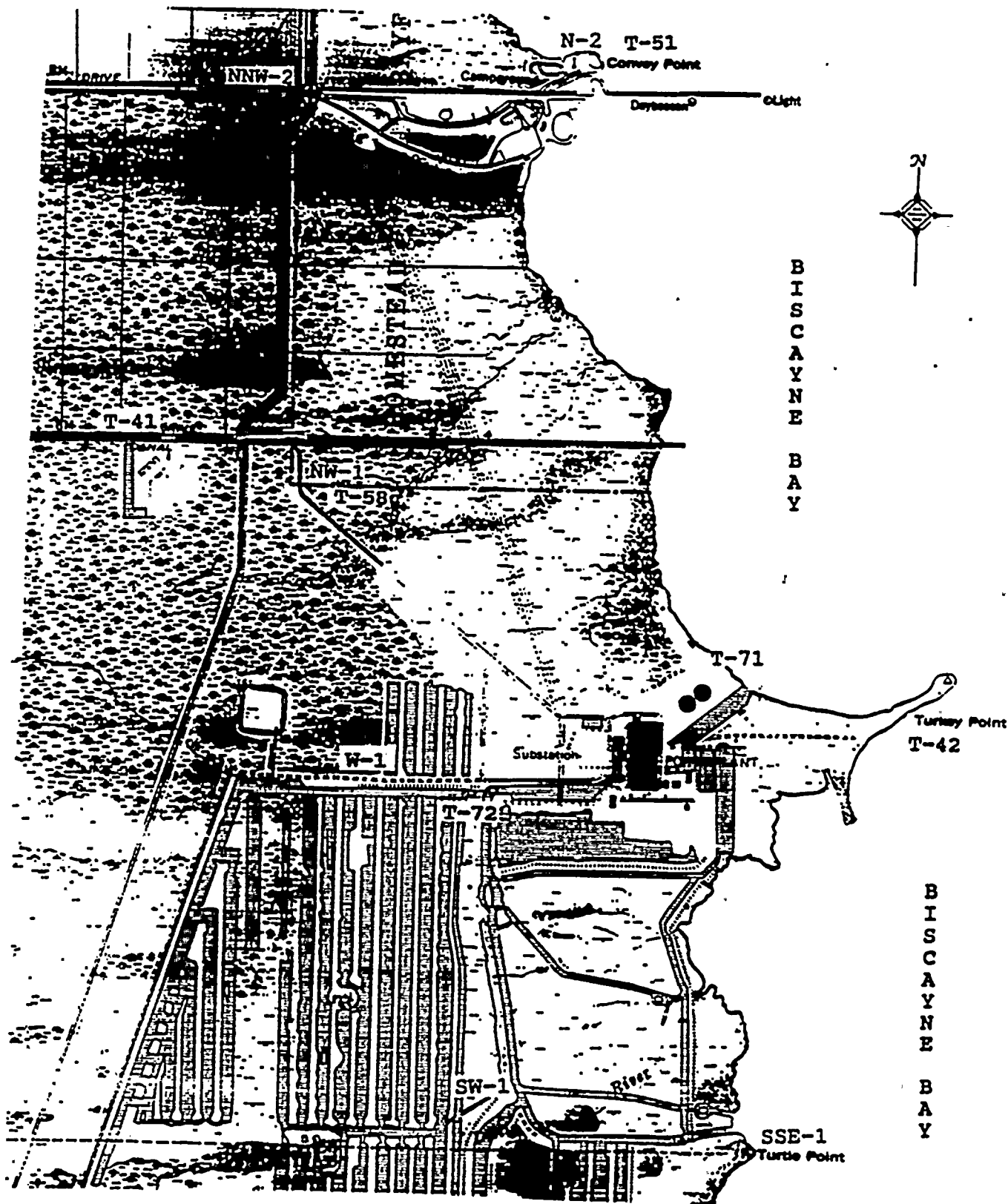
| Pathway       | Location | Description  | Samples Collected     | Sample Collection Frequency | Approx. Distance (miles) | Direction Sector |
|---------------|----------|--|-----------------------|-----------------------------|--------------------------|------------------|
| Food Products | T67*     | Near Biscayne Bay, Vicinity of Cutler Plant North to Matheson Hammock Park | Broad leaf vegetation | Monthly                     | 13-18                    | N, NNE           |

\* Denotes control sample.









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