Maine Yankee

321 OLD FERRY RD. • WISCASSET, ME 04578-4922

April 7, 2005
MN-05-015 RA-05-016
Proposed Change No. 218, Supplement 17

UNITED STATES NUCLEAR REGULATORY COMMISSION
Attention: Document Control Desk
Washington, DC 20555

References:
(1) License No. DPR-36 (Docket No. 50-309)
(2) Maine Yankee Letter to USNRC, MN-04-020, dated March 15, 2004, License Amendment Request: Release of Non-ISFSI Site Land, Proposed Change No. 218
(3) Maine Yankee Letter to USNRC, MN-04-59, dated December 7, 2004, Release of Non-ISFSI Site Land - FSS Final Report No. 5
(4) USNRC Letter to Maine Yankee, dated March 18, 2005 Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Supplement No. 5.

Subject: **Response to NRC RAI on FSS Final Report No. 5**

On March 15, 2004, Maine Yankee submitted a request for amendment (Reference No. 2) to the facility operating license (Reference No. 1) pursuant to 10 CFR 50.90 and in accordance with the NRC Approved License Termination Plan (LTP) for Maine Yankee, to indicate NRC's approval of the release of the Non-ISFSI site land from the jurisdiction of the license. In support of that request, Maine Yankee supplied the information required in LTP section 1.4.2 and 5.9.3. The land area associated with the license amendment request included the entire non-ISFSI portion of the site land. The dismantlement and survey information for the survey units is being submitted to the NRC in FSS Final Reports.

In Reference No. 3, Maine Yankee submitted FSS Final Report No. 5. In Reference No. 4, USNRC requested additional information on technical information submitted in FSS Final Report No 5. This additional information is provided in an attachment to this letter.

If you have any questions, please contact me.

Sincerely,

Michael J. Meisner
Vice President & Chief Nuclear Officer

MMS501

Attachment: Maine Yankee Response to NRC Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Final Report No. 5

cc: Dr. R. R. Bellamy, NRC Region I
Mr. D. R. Lewis, Esq., Shaw Pittman
Mr. C. Pray, State of Maine, Nuclear Safety Advisor
Mr. P. J. Dostie, State of Maine, Division of Health Engineering
Mr. D. Gillen, NRC Acting Director, Division of Waste Management
Mr. M. Rosenstein, USEPA Region I
Mr. S. J. Collins, NRC Regional Administrator, Region I
Mr. J. Buckley, NRC NMSS Project Manager, Decommissioning
Mr. M. Roberts, NRC Region I
Mr. R. Shadis, Friends of the Coast

Maine Yankee Response to NRC Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Final Report No. 5

NRC RAI on FSS Report No. 5 - RAI No. 1 -

FSS - Release Record FA-0100 Survey Unit 2 is a Class 1 area. LTP Section 5.4.1 requires the performance of 100% Scan Survey for Class 1 areas in accordance with MARSSIM. In addition, LTP Section 5.5.1 (a & d) require sampling or surveys to determine contamination at depth. During the May 24-27 site inspection, the staff observed large deep holes in the floors principally near the pedestals, where the flow-able concrete placed during original plant construction left voids. In addition, the staff noted that in some areas the metal liner was missing and the floor was bare concrete. The holes in the floor are not mentioned in the release record nor is survey information provided that specifically corresponds to these configuration anomolies. Please provide survey data to demonstrate these areas were scanned to comply with the 100% scan requirement.

In addition, the staff observed significant quantities of water on the containment floor which required a significant effort by Maine Yankee to dry prior to performing FSS's of floor surfaces. Given the influx of water onto the containment floor and observing the water under the steel liner, the potential for migration of contamination existed. Please provide (gamma) surveys of the areas (either in conjunction with the FSS or from the Remediation Phase) that demonstrate that no significant contamination at depth was present under the metal liner.

Maine Yankee Response: Holes were made in the steel liner as a consequence of the removal of all concrete from the Containment floors down to the liner. The holes were not a pre-existing condition. In order to ensure that the underlying concrete did not become contaminated to significant levels, the exposed area beneath the liner was checked. The larger holes were surveyed by SPA-3 and 43-68 for signs of elevated activity. Concrete samples were taken and analyzed using the same criteria as previous sub-surface samples. Results of 74 floor and sub-liner SPA-3 measurements were all less than 30,000 c/m. The concrete samples were all less than the 37 pCi/g criteria for 1 cm depth of concrete (the maximum value was 19.2 pCi/g). These survey results demonstrate that no significant contamination at depth is present under the metal liner.

Attached (Appendix A) are the gamma scan results of the Containment Building liner holes.

Maine Yankee Response to NRC Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Final Report No. 5

NRC RAI on FSS Report No. 5 - RAI No. 2 -

In FA-0100 SU-4, Table 2, Sample Location 15 has a negative value of -580 cpm equating to -1395 dpm/100 cm^2. This measurement appears to be excessively negative and does not appear to be a valid sample measurement within the data set presented. Please justify the quality of the sample measurement and validity of the measurement within the data set.

Maine Yankee Response:

While the measurement at Sample Location 15 appears to be excessively negative, it is within 2 sigma (501 cpm) of the mean value of 398 cpm. All 21 measurements were taken with the same 43-68 detector and E-600 instrument. The detector and E-600 used in the survey were properly calibrated and source checked prior to performing the survey. Both were satisfactorily checked following the survey. There were no problem reports issued for the instrument at the time of the direct measurement survey.

Survey location M015 was located on the south wall of the access tunnel to the ICI Sump area. The direct measurement location was near the opening of the tunnel into the ICI Sump. Since the location was near the opening, it was exposed to higher neutron fluence rates than portions of the vertical shaft further away from the opening such as M011 and M012 but less than those located in the ICI Sump wall such as M018 through M021. The complex geometry of the ICI Sump resulted in variations in the ambient radiation levels.

The mean and standard deviation of the 21 FSS direct measurements was 957 dpm/100cm^2 and 1,205 dpm/100cm^2, respectively. If sample measurement, M015, were removed from the data set, the mean and standard deviation would be: 1075 dpm/100cm^2 and 1106 dpm/100cm^2 respectively, resulting in an actual relative shift of 15.3, which when adjusted to 3.0 would result in a required number of samples of 14. Therefore, the survey unit would have passed with sufficient statistical power even if sample measurement, M015, were removed from the data set.

NRC RAI on FSS Report No. 5 - RAI No. 3

On October 14, 2004, Maine Yankee submitted an addendum to FSS Supplement 1. In this addendum, Table 2A, information is provided on how and where various features not included in the scope of FSS Supplement 1 will be dispositioned. Table 2A indicates that a number of penetrations from the Spray Building will be surveyed with the survey units from Supplement 5. Specifically, based on our review of Supplement 5, the staff was not able to verify the following:

- *Survey of 10 inch penetration from FA-1700 SU3 in FA-0100 SU5.*
- *Survey of 10 inch penetration from FA-1700 SU4 in FA-0100 SU5.*
- *Survey of 2 inch penetration from FA-1700 SU5 in FA-0100 SU5*
- *Surveys of the 5 penetrations thru the south wall (from FA1700 SU2) and the 5 penetrations thru south wall (from FA-1700 SU8). Table 2A indicates that these penetrations will be surveyed as part of alleyway east-west excavations (FR-0110 SU3).*

Based on information in Supplement 5, alleyway east-west excavations are included in FR-0110, not FR-0111 (identified as soil remediation survey unit areas). Further, these 10 penetrations do not appear to be included in the east-west excavations FR-0111 SU3.

Please provide survey data for the above referenced penetrations.

Maine Yankee Response:

Provided below are the specific references to the FSS survey documentation where each of these penetrations is covered.

- *Survey of 10 inch penetration from FA-1700 SU3 in FA-0100 SU5* - This penetration was designated M008 on Map FA 0100-U5-SCANS in survey package FA-0100-05.
- *Survey of 10 inch penetration from FA-1700 SU4 in FA-0100 SU5.* - This penetration was designated C007 on Map FA 0100-U5-SCANS in survey package FA-0100-05. The penetration was core bored and removed during the remediation process. The resulting hole was a 24" concrete penetration hence the "C" designation.
- *Survey of 2 inch penetration from FA-1700 SU5 in FA-0100 SU5* - This penetration was designated C005 on Map FA 0100-U5-SCANS in survey package FA-0100-05. The penetration was core bored and removed during the remediation process. The resulting hole was an 8" concrete penetration hence the "C" designation.
- *Surveys of the 5 penetrations thru the south wall (from FA1700 SU2)* - Except for two 14" PCC penetrations, all pipe sleeves were removed from the wall. The opening, surrounding concrete, and PCC penetrations were surveyed in Survey Package FR0111-03. This survey package also contains Map FR0111U3-04 which shows the remaining PCC penetrations as P001 and P002. Additional information of the removed penetrations was provided in Reference No 22.
- *and the 5 penetrations thru south wall (from FA-1700 SU8).* - Except for two 14" SCC penetrations, all pipe sleeves were removed from the wall. The opening, surrounding concrete, and SCC penetrations surveyed in survey package FR0111-03. This survey package also contains Map FR0111U3-04 which shows the remaining SCC penetrations as P003 and P004. Additional information on the removed penetrations was provided in Reference No. 22.
- *Table 2A indicates that these penetrations will be surveyed as part of alleyway east-west excavations (FR-0110 SU3). Based on information in Supplement 5, alleyway east-west excavations are included in FR-0110, not FR-0111 (identified as soil remediation survey unit areas). Further, these 10 penetrations do not appear to be included in the east-west excavations FR-0111 SU3.* - As indicated above, these penetrations were surveyed as part of the Yard West Excavation Survey Unit 3 (FR-0111 SU 3).

In Appendix B, Maine Yankee is providing an update to Table 2A of Reference No. 12. In this update, each penetration which was covered by FA-0100 and FR0111 survey unit release records are specifically identified. Note that the 10" penetration (SU-7 through north (containment) wall) does not exist and has been corrected.

Maine Yankee Response to NRC Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Final Report No. 5

NRC RAI on FSS Report No. 5 - RAI No. 4

The FSS design for these four survey units is based on the assumption that the soil nuclide fractions for Cs-137 and Co-60 are 0.890 and 0.009, respectively, as provided in Section 2.5.3, "Nuclide Profile," Table 2-11, of the LTP. Consistent with the profile, Table 2-2 of FSS-RR for FR-0110 Survey Units 1-4, lists the scan MDC as 5.9 pCi/g for Cs-137 (per LTP Table 5.6). Information presented in the FSS-RRs suggests that significantly more Co-60 may be present in the soil than was anticipated. It is not clear from the FSS-RR that the FSS design adequately considered the potential for Co-60 and other contaminants in the soil. Therefore, it is not clear that appropriate measurements were performed to demonstrate compliance with requirements.

Basis:

Section B of the FSS-RR for FR-0110 Survey Units 1-4 states that the soil survey unit was suspended in late 2002 and resumed during the spring of 2003. At this time, "it was determined that radioactivity had migrated into the remaining soil from the open, abandoned pipes in the excavation." The nuclide profile for contaminants in the abandoned pipe is not addressed in the FSS-RRs. However, FSS-RR Table 2, "Direct Measurements" data (see summary table below) indicates that the ratio of Co-60 to Cs-137 is approximately 1, for Survey Units 1-4. This ratio indicates that the Co-60 fractional activity for Survey Units 1-4 is higher that the 0.009 listed in LTP Table 2-11.

FR-0110 Survey Unit	*Co-60 Table 2 Mean pCi/g*	*Cs-137 Table 2 Mean pCi/g*	*Ratio Cobalt:Cesium*
1	*0.251*	*0.259*	*0.97*
2	*0.149*	*0.119*	*1.25*
3	*0.267*	*0.282*	*0.95*
4	*0.18*	*0.38*	*0.47*
Average	*0.21*	*0.26*	*0.81*

LTP Table 2.8, "Nuclide Fractions for Contaminated Concrete Surfaces Special Areas," which includes PAB pipe tunnel, identifies fractions for Co-60 and Cs-137 as 0.368 and 0.289, respectively, which results in a ratio of approximately 1. The FSS-RR data appears to be more consistent with the nuclide fractions in LTP Table 2.8.

As noted in the FSS-RRs Table 1, "Survey Unit Design Parameters," the survey design is based on a DCGL for Cs-137. A scan MDC of 5.9 pCi/g for Cs-137, from LTP Table 5-6, is listed in FSS-RR Table 2-2, as being utilized for FR-0110 Survey Units 1-4. The 5.9 pCi/g scan MDC exceeds the $DCGL_{EMC}$ for Co-60 shown in Table 2-2 as 3.3, 5.2, 5.8, 3.3 pCi/g for Survey Units 1-4, respectively. A scan MDC for Co-60 is not provided.

In addition, the use of the scan MDC based solely on Cs-137 is non-conservative. According to NUREG 1507, Table 6.4, the scan MDC for Co-60 should be approximately twice the scan MDC for Cs-137, given that the efficiency of the SPA-3 detector is less than half for the higher energy Co-60 gamma energies. In NUREG-1507, a 2 in. X 2 in. NaI detector's response for Co-60 is 430 cmp per microR/hr versus 900 cpm microR/hr for Cs-137.

Please justify the design for these survey units and the adequacy of the measurements performed.

Maine Yankee Response:

The FSS sampling design for the FR0110 survey units was based upon Cs-137, which is the predominant nuclide in the contaminated soil at Maine Yankee. As stated in LTP Section 5.8.1, "the Cs-137 to Co-60 ratio will vary in the final survey soil samples, and this will be accounted for using a "unity rule" approach as described in NUREG 1505 Chapter 11."

The survey design was based on a range of Cs-137 design $DCGL_{EMC}$ (*a priori*) values from 6.5 pCi/g to 16.3 pCi/g depending on the layout of the direct points and a scan MDC value of 5.9 pCi/g for Cs-137 as described in section 5.5.2 of the LTP. If the FSS sampling design was based upon the Co-60 DCGL (0.86 pCi/g), the range of Co-60 design $DCGL_{EMC}$ (*a priori*) values would be from 3.3 pCi/g to 5.8 pCi/g, for the sample area (the area between the sample points). The survey results are adequate to demonstrate that the survey units meet the release criterion based upon the following:

1. A total of 196 individual soil samples were taken in the four survey units including the investigation samples. Out of these 196 samples, only 6 showed as-left activity greater than the Co-60 DCGL with a maximum activity of 1.07 pCi/g. None of these results were greater than 50% of the lowest Co-60 design $DCGL_{EMC}$ (*a priori*) of 3.3 pCi/g.

2. A significant portion of the survey unit's area was investigated. Of the 109 scan grids located in the survey units, 59 or 54%, were investigated. Only five of the grids had as-left activity above the DCGL.

3. As indicated in the LTP, the design basis hot spot is 2 m^2. Table 6-12 of the LTP shows that the Co-60 area factor for a contaminated soil area of 2 m^2 is 7.2. This results in a $DCGL_{EMC}$ of 6.2 pCi/g for Co-60 which is greater than the scan MDC of 5.9 pCi/g (for Cs-137) given in the LTP. NUREG-1757, Vol. 2, Appendix A.7.6 identifies circumstances where design elevated area (*a priori*) may be set at less than the area between the sample points based upon an estimate of the area likely to have elevated concentrations, similar to the design basis hot spot described in Maine Yankee LTP Section 5.5.2.d.

4. The four soil survey units in FR0110 covered a total of 513 m^2. If this total area were divided by the total number of soil samples, the resulted sample frequency would be an average of one sample being taken per 2.6 m^2 (an area slightly larger than the design hot

spot). A 2.6 m^2 area has a corresponding Co-60 area factor of 6.4 which gives a $DCGL_{EMC}$ of 5.5 pCi/g for Co-60.

5. As shown in the characterization data described in the LTP, the most likely nuclide to be present in elevated areas is Cs-137, which was scan detectable to levels less than the design $DCGL_{EMC}$ (*a priori*).

6. The SPA-3 is capable of detecting Co-60 activity at levels consistent with the lowest Co-60 $DCGL_{EMC}$ (*a priori*) and would have easily detected Co-60 activity at the $DCGL_{EMC}$ for the design basis hot spot ($2m^2$).

   The SPA-3 scan MDC identified in NUREG 1507, Table 6.4 for Co-60 is less than half that for Cs-137. Thus, NUREG 1507 reinforces our conclusion that it is conservative to use the scan MDC established for Cs-137 for comparison to Co-60 values. The scan MDC of the SPA-3 detector was established in EC-009-01 as described in the LTP based on a Cs-137 response factor of 472 c/m per pCi/g in soil. The scan MDC is a function of the detector response factor and the background count rate which gives an alarm rate corresponding to Type 1 and Type 2 errors of 0.05. The LTP (Table 5-4a) lists an MDC for the SPA-3 of 3.2 pCi/g (later administratively raised to 5.9 pCi/g) for a 2 m^2 design basis hot spot.

   Maine Yankee determined the detector response factor for Co-60 in the same manner as the response to Cs-137 was determined, by measuring the counts per minute from a known pCi/g source of contaminated soil. Co-60 gives a detector response of 478 c/m per pCi/g in soil. As stated above, the MDC is a function of the response factor and the background count rate. Because the response factors are similar for either nuclide, the SPA-3 MDC for Co-60 is very similar and slightly lower than that for Cs-137.

7. Notwithstanding Maine Yankee's stated intent in LTP section 5.5.1.b, to treat excavated areas as surface soil for FSS purposes, the as-left location of this survey area is actually below the surface and not normally subject to scanning, as per NUREG-1757, Vol. 2, Appendix G.2.1.

Section B of the FR-0110 Survey Unit Release Records described the recontamination of the survey units following the initial remediation performed in late 2002. The radioactivity that had presumably migrated into the remaining soil from open, abandoned pipes in the excavation was no different than the contamination source that originally contaminated the PAB alleyway, ie. the pipes which interfaced with the Refueling Water Storage Tanks. This contamination source relationship is established in LTP section 2.5.3.c (footnote 6). Furthermore, the nuclide fraction described in LTP Table 2.8 applies to specific special areas including the containment outer annulus trench and the Primary Auxiliary Building tunnel. The conditions which produced these special areas are described in the special report entitled: "Transuranic and other Hard to Detect Radionuclides in Maine Yankee Sample Media," transmitted to the NRC in Reference No.1. These conditions were not present in these contamination sources.

References

1. Maine Yankee Letter to USNRC dated January 16, 2002, MN-02-002, Transuranic and other Hard to Detect Radionuclides in Maine Yankee Sample Media
2. Maine Yankee Letter to USNRC, MN-02-037, dated August 28, 2002, Maine Yankee Addendum Report Regarding Site Hydrogeology
3. Maine Yankee Letter to USNRC, MN-02-048, dated October 15, 2002, Revision 3, Maine Yankee's License Termination Plan
4. USNRC Letter to Maine Yankee dated February 28, 2003, "Issuance of Amendment No. 168 to Facility Operating License No. DPR-36 - Maine Yankee Atomic Power Station - Approval of the MY License Termination Plan
5. Maine Yankee letter to the USNRC, MN-03-049, dated September 11, 2003, Proposed Change: Revised Activated Concrete DCGL and More Realistic Activated Concrete Dose Modeling - License Condition 2.B.(10), License Termination; Proposed Change No. 216.
6. USNRC Letter to Maine Yankee dated February 18, 2004, Issuance of Amendment No. 170 to Facility Operating License No. DPR-36 - Maine Yankee Atomic Power Station - Approval of the Revised Activated Concrete DCGL and More Realistic Activated Concrete Dose Modeling
7. Maine Yankee Letter to USNRC, MN-04-020, dated March 15, 2004, License Amendment Request: Release of Non-ISFSI Site Land, Proposed Change No. 218
8. Maine Yankee Letter to USNRC, MN-04-044, dated August 12, 2004, Release of Non-ISFSI Site Land - Resubmittal of FSS Final Report No. 1, Proposed Change No. 218, Supplement 2
9. Maine Yankee Letter to USNRC, MN-04-047, dated September 2, 2004, License Amendment Request - Release of Non-ISFSI Site Land, Proposed Change No. 218, Supplement 3
10. USNRC Letter to Maine Yankee dated October 14, 2004, Meeting Report for the September 9, 2004, Meeting with Maine Yankee Atomic Power Company (Maine Yankee)
11. Maine Yankee Letter to USNRC, MN-04-049, dated September 15, 2004, Release of Non-ISFSI Site Land - FSS Final Report No. 2, Proposed Change No. 218, Supplement 4.
12. Maine Yankee Letter to USNRC, MN-04-053, dated October 14, 2004, Release of Non-ISFSI Site Land - Addendum to FSS Final Report No. 1, Proposed Change No. 218, Supplement 6
13. USNRC Letter to Maine Yankee dated November 4, 2004, Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Supplement Nos. 1 and 3
14. USNRC Letter to Maine Yankee dated November 30, 2004, Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Supplement No. 2.
15. Maine Yankee Letter to USNRC, MN-04-058, dated December 7, 2004, Response to NRC RAI's on FSS Report Nos. 1 and 3, Proposed Change No. 218, Supplement 8
16. Maine Yankee Letter to USNRC, MN-04-059, dated December 7, 2004, Release of Non-ISFSI Site Land - FSS Final Report No. 5, Proposed Change No. 218, Supplement 9

17. Maine Yankee Letter to USNRC, MN-04-060, dated December 22, 2004, Release of Non-ISFSI Site Land - FSS Final Report No. 6, Proposed Change No. 218, Supplement 10
18. Maine Yankee Letter to USNRC, MN-04-061, dated December 23, 2004, Response to NRC RAI's on FSS Report No. 2, Proposed Change No. 218, Supplement 11
19. USNRC Letter to Maine Yankee dated January 7, 2005, Receipt of Maine Yankee's Response to Request for Information on Final Status Survey Report Supplements 1 and 3
20. USNRC Letter to Maine Yankee dated January 19, 2005, Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Supplement No. 2
21. Maine Yankee Letter to USNRC, MN-05-001, dated January 20, 2005, Release of Non-ISFSI Site Land - FSS Final Report No. 7, Proposed Change No. 218, Supplement 12
22. Maine Yankee Letter to USNRC, MN-05-006, dated February 16, 2005, Response to NRC RAI's on FSS Final Report Nos. 1 and 2, Proposed Change No. 218, Supplement 14
23. Maine Yankee Letter to USNRC, MN-05-007, dated February 17, 2005, Release of Non-ISFSI Site Land - FSS Final Report No. 8, Proposed Change No. 218, Supplement 15
24. Maine Yankee Letter to USNRC, MN-05-008, dated February 23, 2005, Release of Non-ISFSI Land - FSS Final Report No. 8 - Attachment I, Figure 1 and 2 and Attachment II Header Page, Proposed Change No. 218, Supplement 16
25. USNRC Letter to Maine Yankee dated March 13, 2005, Request for Additional Information (RAI) Regarding Final Status Survey (FSS) Supplement No. 5

Appendix A

Final Remediation Survey Gamma Scan

For

Containment Holes in Liner Following Complete Removal on Concrete Above the Liner

Three Surveys dated April 28, 2004
One Survey dated June 17, 2004 (11 pages)
One Survey dated June 21, 2004 (2 pages)

Maine Yankee
RELIABLE ELECTRICITY SINCE 1972

MAINE YANKEE GENERAL SURVEY RECORD FORM

Map#: MSC-001 Revision#: 00	Date: 4-28-04	Time: 1115	Reactor Pwr %: N/A	Tech File Number: 17.500.5	RWPs Used: N/A ~~04-0001 / 17500.7 4/28/04~~	Dose Received: 0 mR

Surveyor Name: (Printed)	Surveyor Name: (Signature)	Location/Job Description:
F.D. Lemieux	F.D. Lemieux	Containment / Survey of Holes cut out around #3 RCP

[1] Required R.P. Review / Date: G Gann 4/28/04

[2] Required ALARA Supervisor Review / Date: N/A

REASON FOR SURVEY: ROUTINE[1] ___ JOB-COVERAGE[1] ___ SHIELDING[1,2] ___ X OTHER[1] (Specify): Remediation Survey

INSTRUMENTS USED

MODEL	SERIAL #	CAL DUE	MDA
E600	1648	10-26-04	N/A
SSFA3	725329	6-18-04	N/A

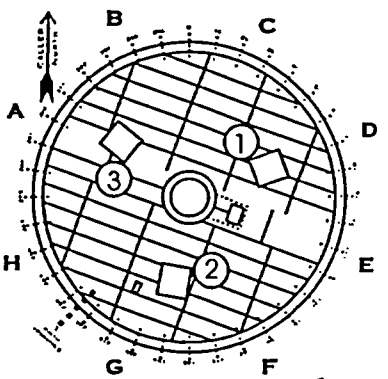
CONTAMINATION RESULTS

SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS
N/A				N/A			

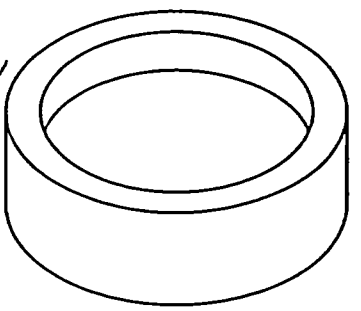
KEY:

- Contact exposure rates denoted by: *
- Smear locations denoted by: •
- Boundaries or barriers denoted by: -x-x-
- Dose rates denoted by: ▪
- Large area smears denoted by: ▪
- Air sample location denoted by: AS-#

Sample Continuation Sheet Used: ___ YES



9.32K Background / 10.24K Peak Hold



Background 8.56K / Peak Hold 21.2K

Background 7.72K / Peak Hold 19.03K

Background 8.64K / Peak Hold 13.09K

Background 9.24K / Peak Hold 9.53K

Background 10.89K / Peak Hold 12.09K

10.15K Background / 12.80K Peak Hold

CALLED NORTH

13.91K Background / 18.91K Peak Hold

12.64K Background / 13.91K Peak Hold

Maine Yankee
RELIABLE ELECTRICITY SINCE 1972

MAINE YANKEE GENERAL SURVEY RECORD FORM

Map#: MSC-001 Revision#: 00	Date: 4-28-04	Time: 1020	Reactor Pwr %: N/A	Tech File Number: 18.500.3	RWPs Used: ~~04-0001~~ / 19560.7 N/A ~~4/28/04~~	Dose Received: 0 mR
Surveyor Name: (Printed) F.D. Lemire	Surveyor Name: (Signature) F.D. Lemire	Location/Job Description: Containment / Survey holes cut out around #2 RCP				

[1] ~~Required R.P.~~ Review / Date: L. L. Gann

[2] Required ALARA Supervisor Review / Date: N/A

REASON FOR SURVEY
ROUTINE[1] JOB-COVERAGE[1]
SHIELDING[1,3] X OTHER[1] (Specify): Remediation Survey

INSTRUMENTS USED

MODEL	SERIAL #	CAL DUE	MDA
E 600	1648	10-20-04	N/A
5SBA3	725329	6-12-04	N/A

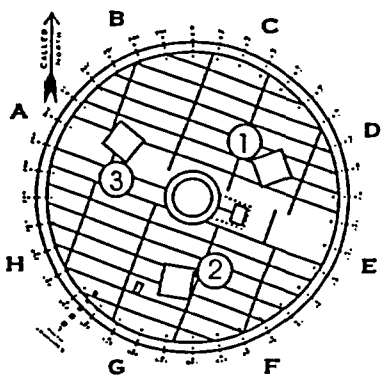
CONTAMINATION RESULTS

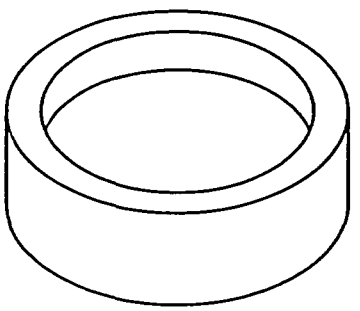
SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS
	N/A		N/A		N/A		N/A

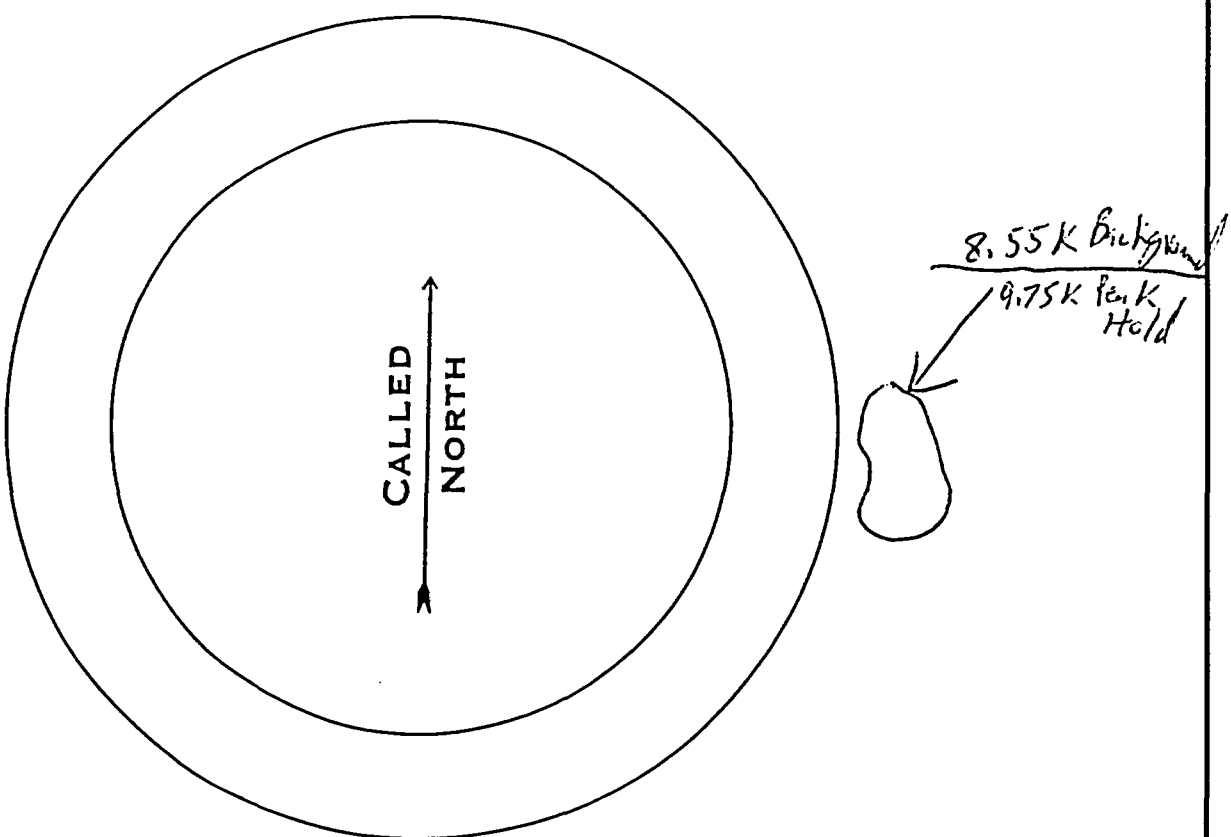
KEY:

- Contact exposure rates denoted by: *
- Smear locations denoted by: #
- Boundaries or barriers denoted by: -x-x-
- Dose rates denoted by: #
- Large area smears denoted by: ..#..
- Air sample location denoted by: AS-#

Sample Continuation Sheet Used: YES







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RELIABLE ELECTRICITY SINCE 1972

MAINE YANKEE GENERAL SURVEY RECORD FORM

Map#: MSC-001 Revision#: 00	Date: 4-28-04	Time: 0900	Reactor Pwr %: N/A	Tech File Number: 18.500.3	RWPs Used: N/A ~~04-6000 / 19500~~	Dose Received: 0 mR
Surveyor Name: (Printed) F. D. Lemire	Surveyor Name: (Signature) F D Lemire	Location/Job Description: Containment / Survey in holes cut out around #1 RCP				

[1] Required R.P. Review / Date: GANN 4/28/04

[2] Required ALARA Supervisor Review / Date: N/A

REASON FOR SURVEY
ROUTINE[1] JOB-COVERAGE[1]
SHIELDING[1,2] XOTHER[1] (Specify): Remediation

INSTRUMENTS USED

MODEL	SERIAL #	CAL DUE	MDA
E-600	1648	10-20-04	N/A
5SPA 3	725329	6-18-04	N/A

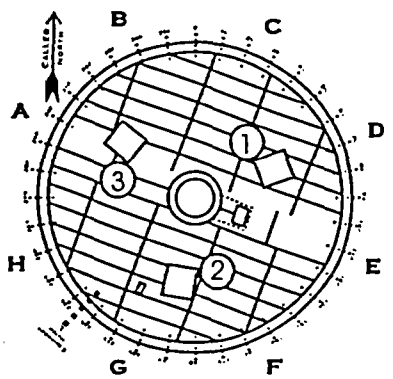
CONTAMINATION RESULTS

SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS
		N/A	N/A	N/A	N/A	N/A	N/A

KEY:

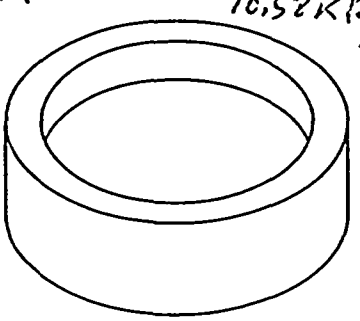
- Contact exposure rates denoted by: *
- Smear locations denoted by: :
- Boundaries or barriers denoted by: -x-x-
- Dose rates denoted by: •
- Large area smears denoted by: •.
- Air sample location denoted by: AS-#

Sample Continuation Sheet Used: YES



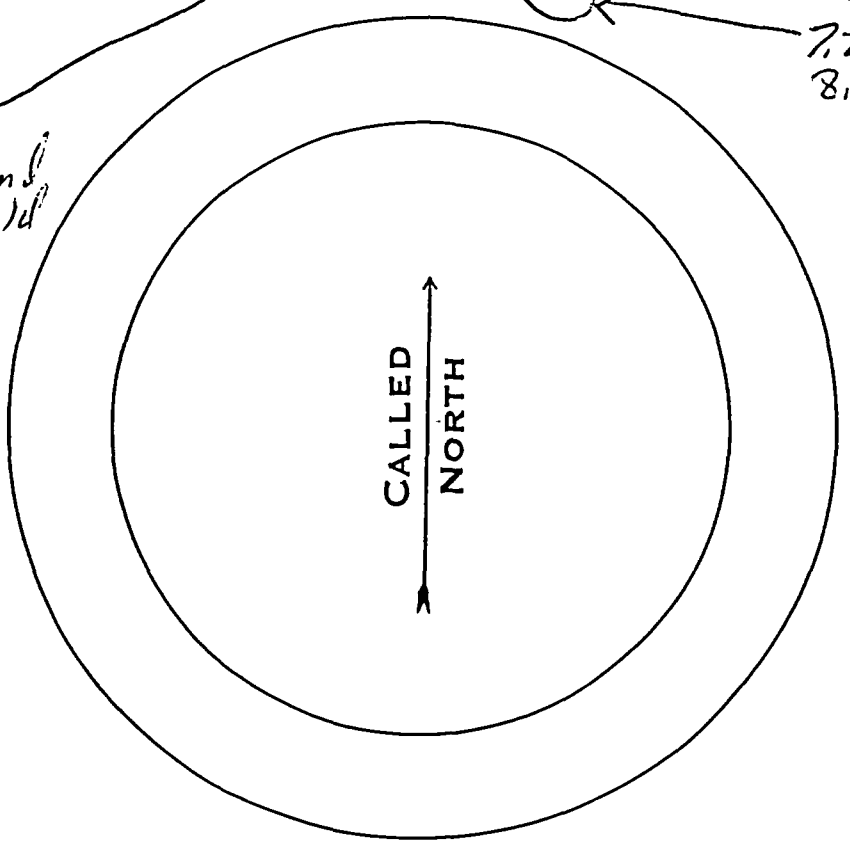
8.71 K Background
10.51 K Peak Hold

8.79 K Background
10.52 K Peak Hold



8.35K Background
9.60 K Peak Hold

7.22 K Background
8.22 K Peak Hold



Maine Yankee
RELIABLE ELECTRICITY SINCE 1972

MAINE YANKEE GENERAL SURVEY RECORD FORM

Map#: MSC-001 / Revision#: 00	Date:	Time:	Reactor Pwr %	Tech File Number:	RWP's Used:	Dose Received:
	6/17/04	1030	S/D	19.200.40.1	N/A	0.0 mR

Surveyor Name: (Printed)	Surveyor Name: (Signature)	Location/Job Description:
McDaniel	McDaniel	CTMT

[1] Required R.P. Review / Date: [signature] 6/18/04

[2] Required ALARA Supervisor Review / Date: N/A

REASON FOR SURVEY
- ☐ ROUTINE[1]
- ☐ JOB-COVERAGE[1]
- ☐ SHIELDING[1,2]
- ☒ OTHER[1] (Specify): SCAN EXPOSED CONCRETE

INSTRUMENTS USED

MODEL	SERIAL #	CAL DUE	MDA
E600	1645	10/1/04	N/A
SPA	726 S600 DG7H 6/17/04	7/28/04	N/A
	N	A	

CONTAMINATION RESULTS

SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS
		See	attached				

KEY:
- Contact exposure rates denoted by: *
- Smear locations denoted by: ⊘
- Boundaries or barriers denoted by: -x-x-
- Dose rates denoted by: •
- Large area smears denoted by: ☐
- Air sample location denoted by: (AS-1)

Sample Contamination Sheet Used? ☐ YES

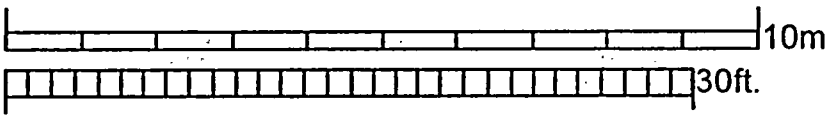
SPA Survey of all exposed concrete areas on the floor of CTMT including 5 holes

Levels on the floor ranged from 8.27K to 12.93K

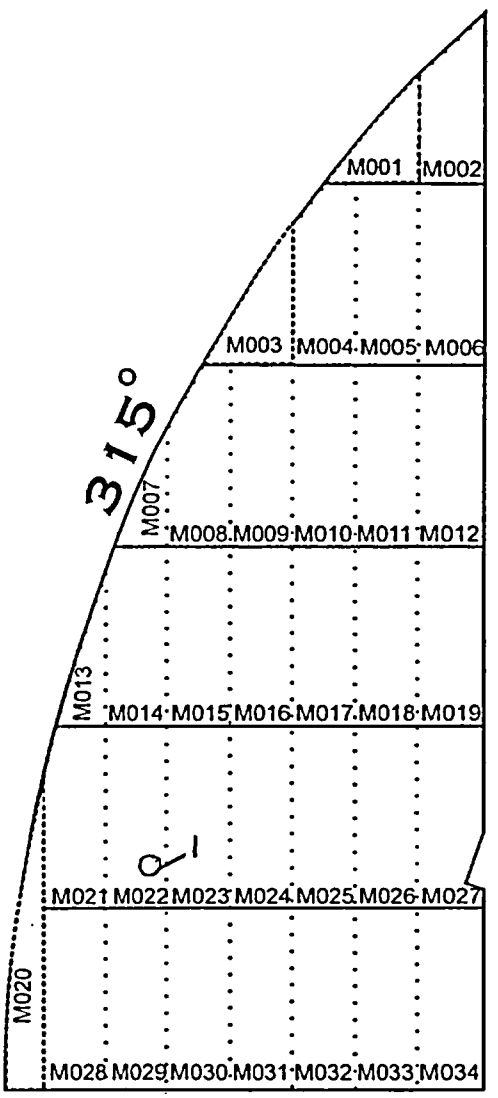
Levels in the 5 holes ranged from 8.75K to 13.72K

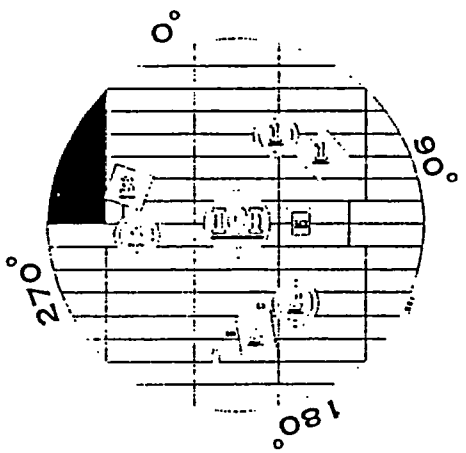
GRIDS 108 & 534 SURVEYED 6/18/04 BY R. GOODLY SSPA-3 # 2056 CAL DUE 11/13/04
E600 # 1643 CAL DUE 10/6/04

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FA 0100-U2-A
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint 2	



1 - 9.82K





Plates C1-H1

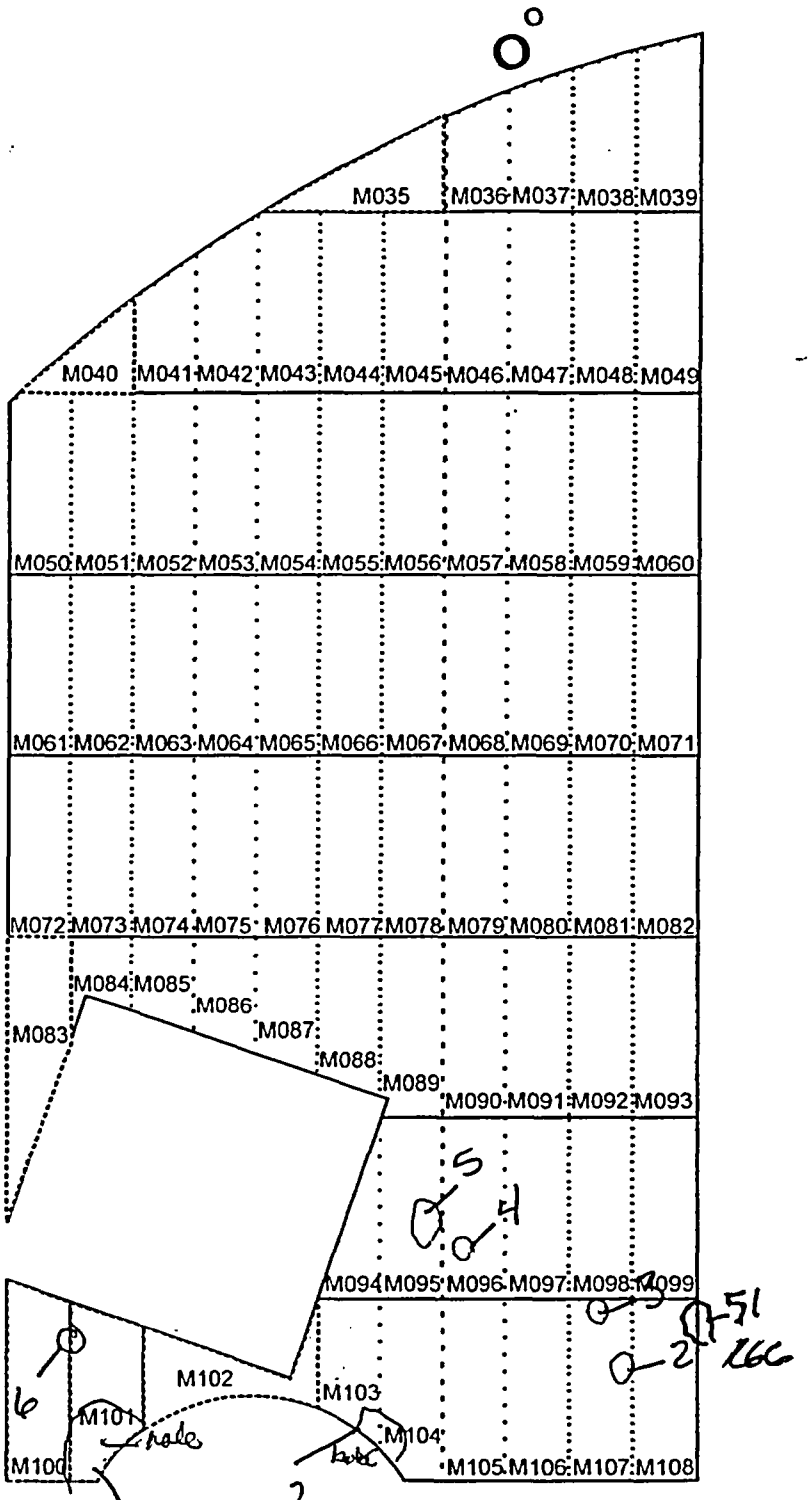
Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FA 0100-U2-B
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint B	

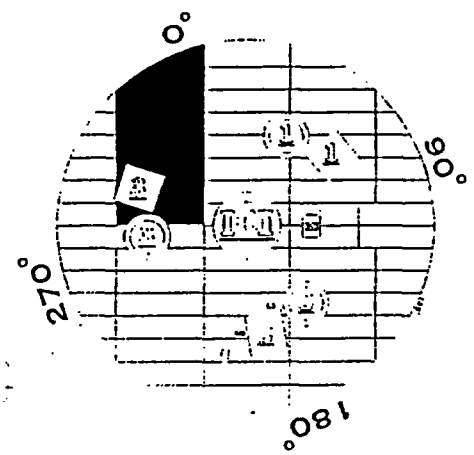
10m

30ft.

2 11.51K
3 11.60K
4 11.96K
5 12.40K
6 9.67K
51 10.9K

hole
1 11.48K
2 10.49K





Plates A2-H2

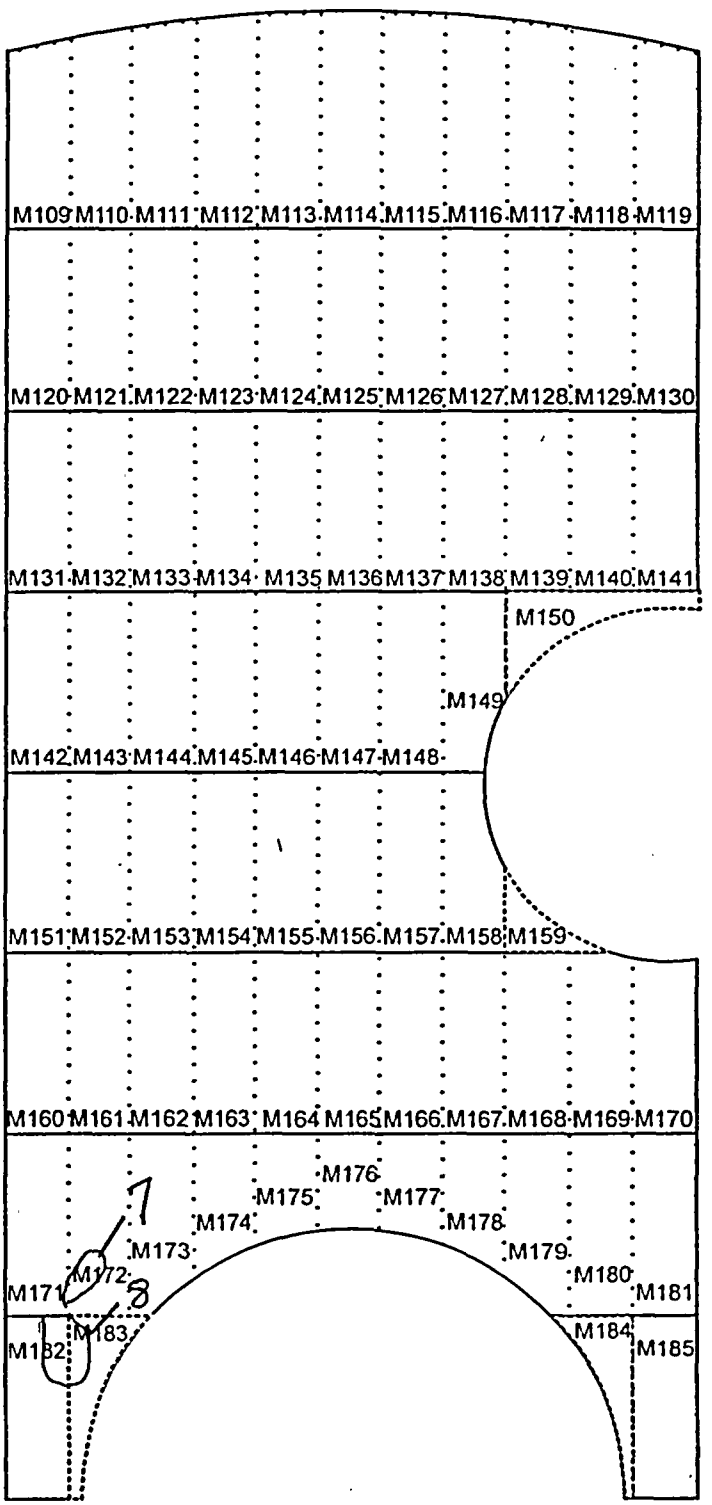
Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FA 0100- U2-C
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint 2	

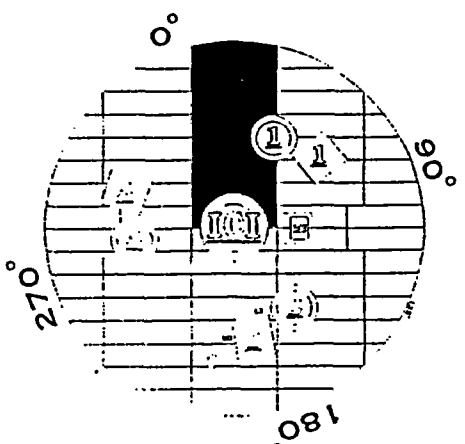
2

10m
30ft.

7 12.93K

8 11.83K





Plates A3-H3

Decommissioning Team | *Maine Yankee Decommissioning Project Survey Map* | Map ID# FA 0100-U2-D

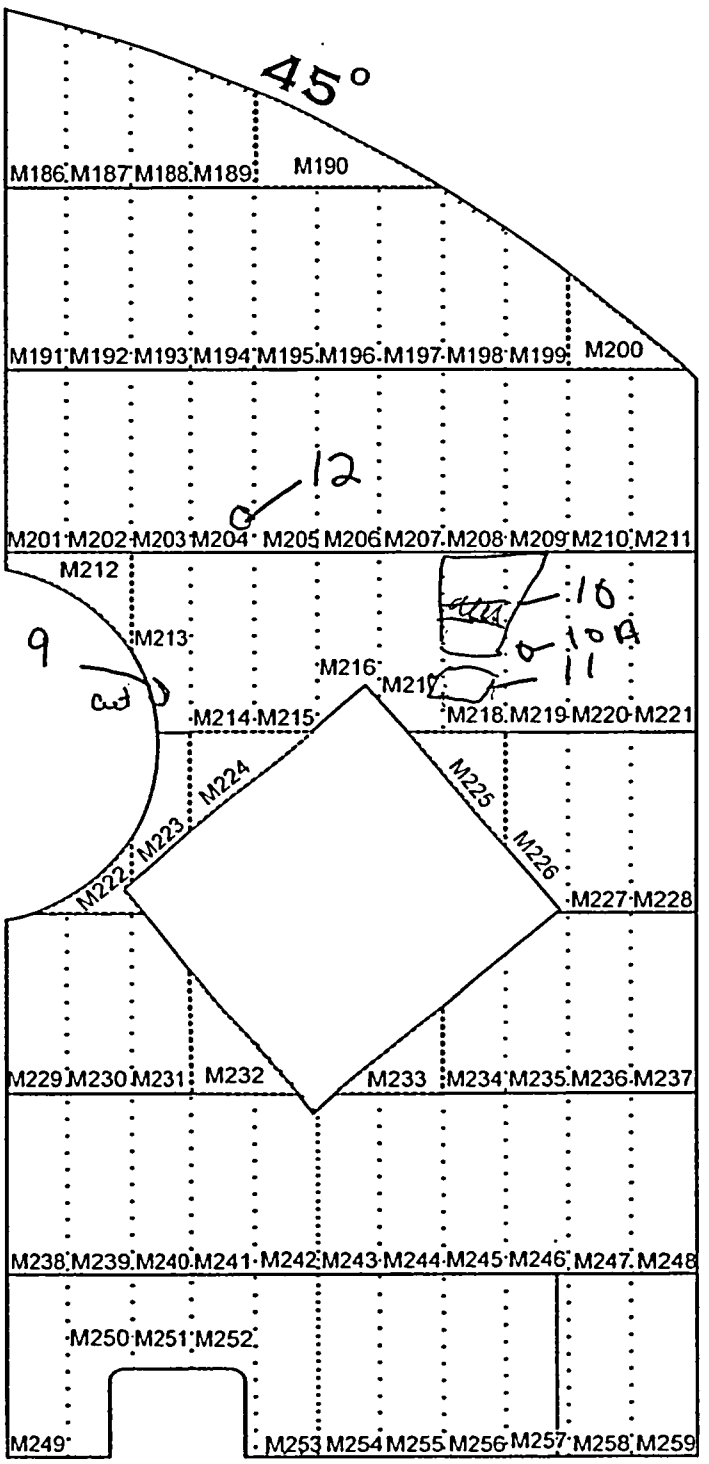
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey | Survey Area Name: Containment Bldg. Survey Uint 2

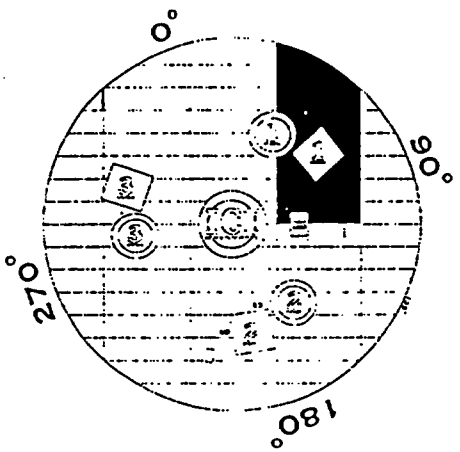
3

10m

30ft.

9 8.27K
10A 9.07K
10 10.98K
11 10.95K
12 9.70K

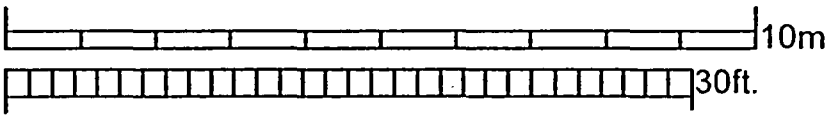


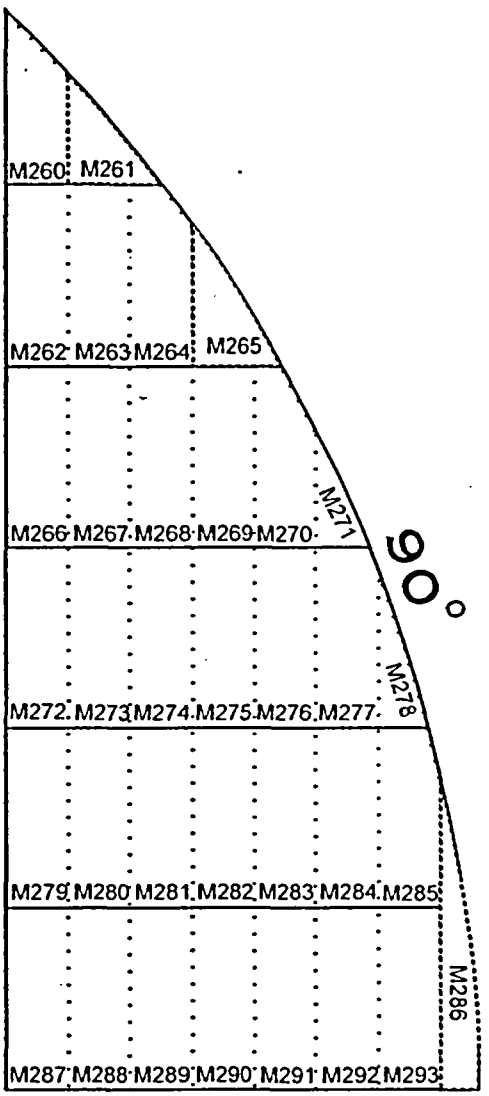


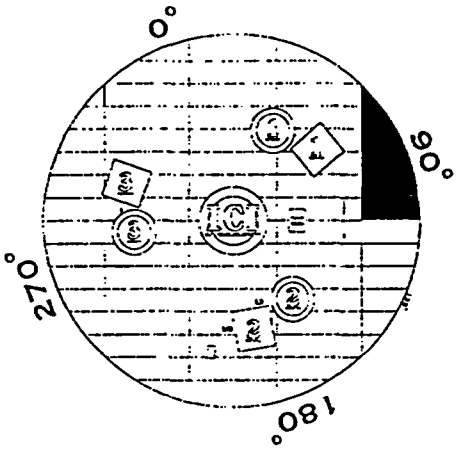
Plates A4-H4

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FA 0100-U2-E
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint 2	

01







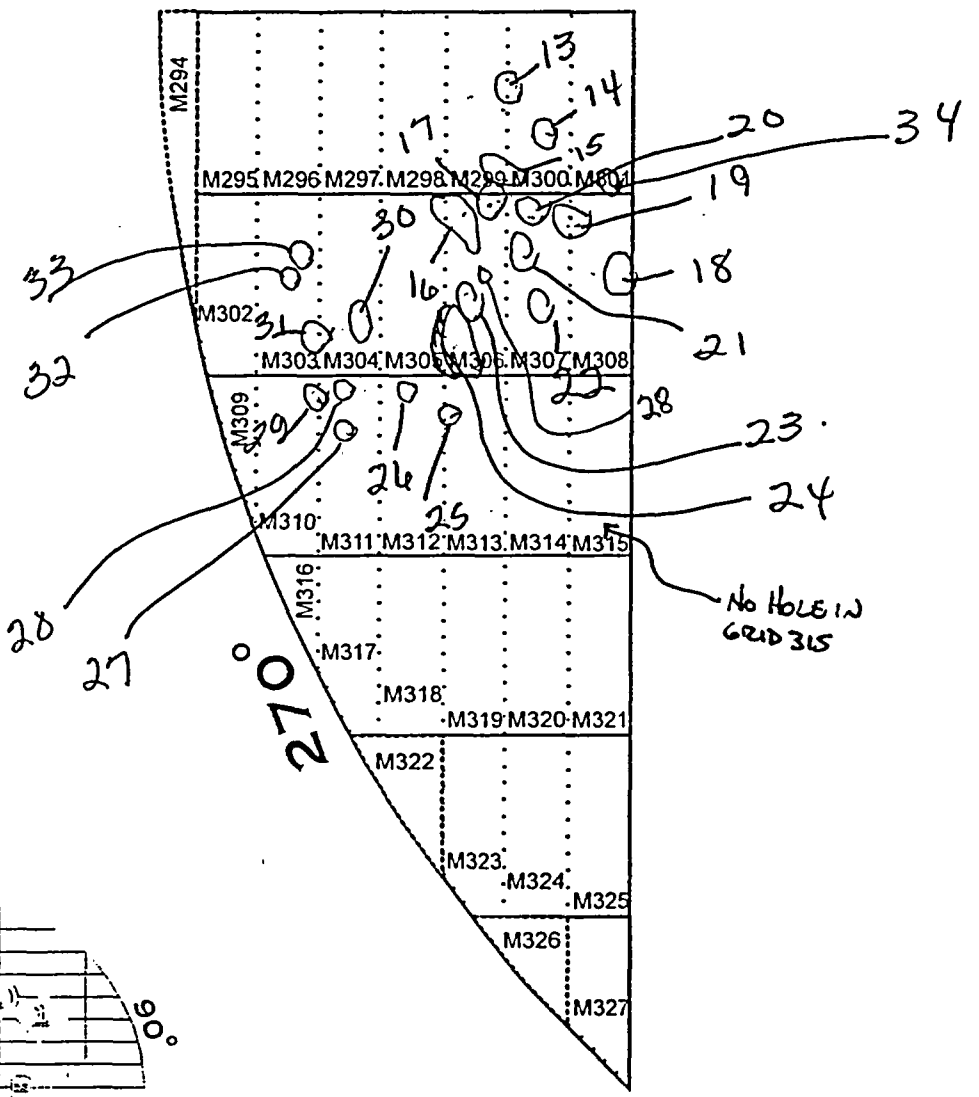
Plates C5-H5

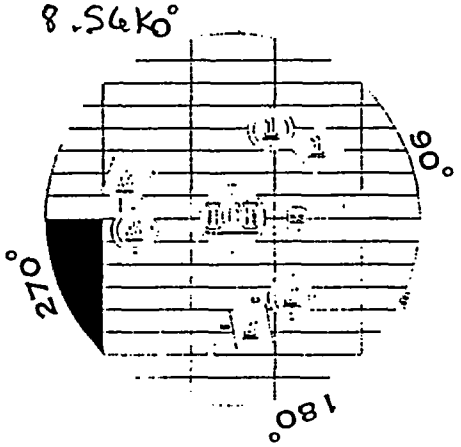
Maine Yankee Decommissioning Team	Maine Yankee Decommissioning Project Survey Map	Map ID# FA 0100-U2-F
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint 2	

22

10m
30ft.

13 9.37K
14 - 9.63K
15 - 10.36K
16 - 9.43K
17 - 9.70K
18 - 10.36K
19 - 9.96K
20 10.06K
21 10.04K
22 8.53K
23 9.30K
24 - 10.33K
25 9.63K
26 8.44K
27 9.14K
28
29 9.79K
30 10.00K
31 10.37K
32 - 10.23K
33 10.25K
34 8.56K





Plates I1-N1

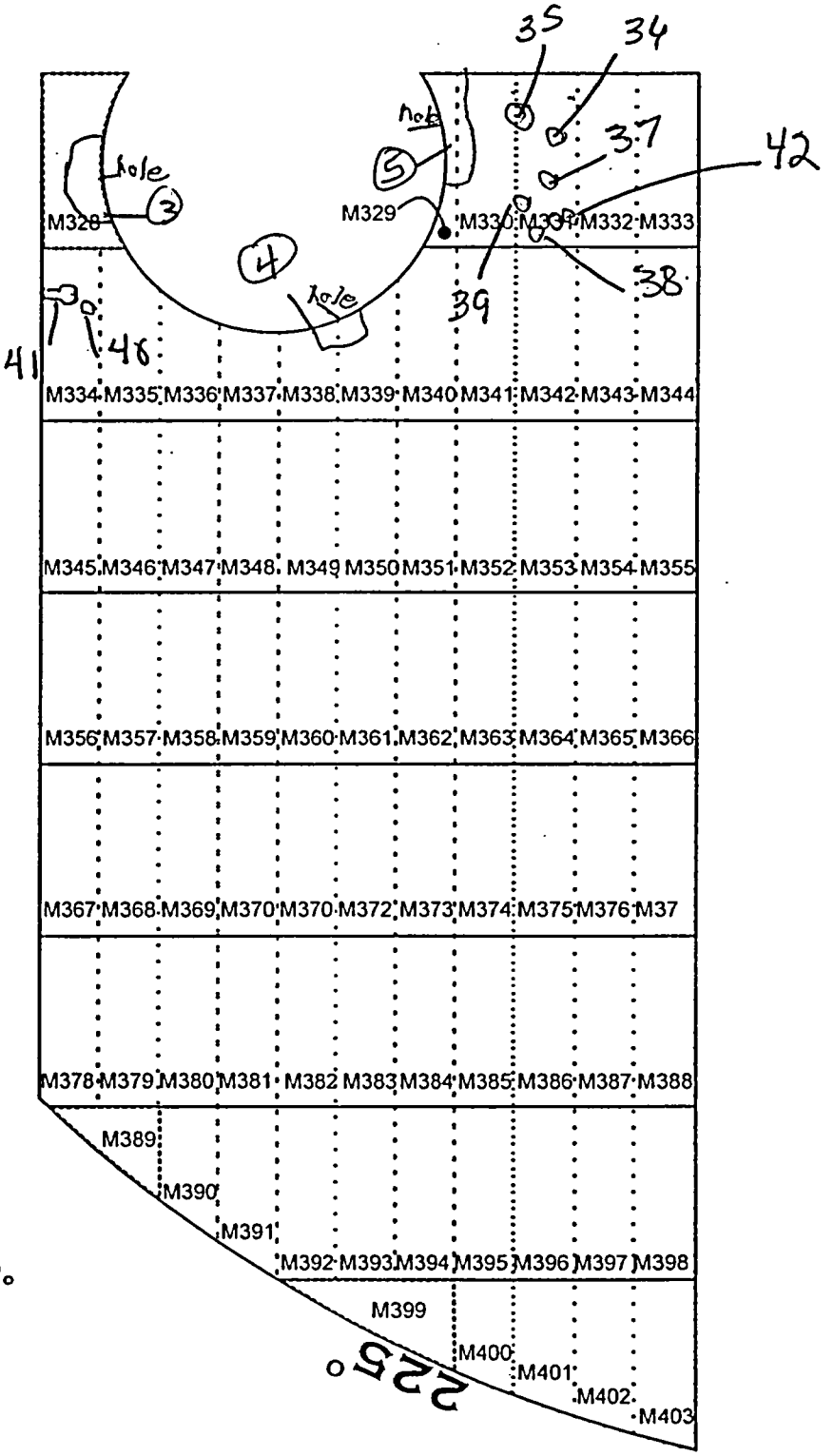
Maine Yankee Decommissioning Team	**Maine Yankee Decommissioning Project Survey Map**	Map ID# FA 0100-U2-G
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint 2	

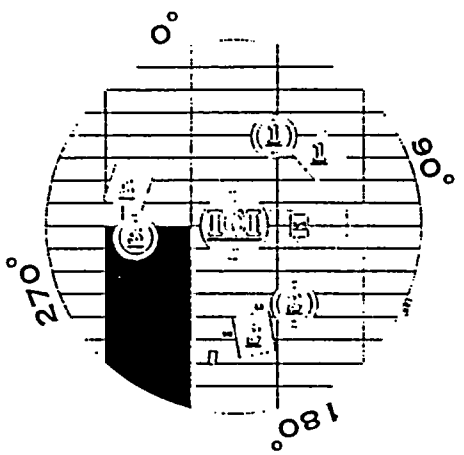
9
3 holes

10m
30ft.

35 12.04K
36 10.96K
37 12.93K
38 10.97K
39 11.37K
40 - 9.44K
41 10.07K
42 13.04K
42A 11.37K

hole
3) 13.72K
4) 8.75K
5) 11.97K

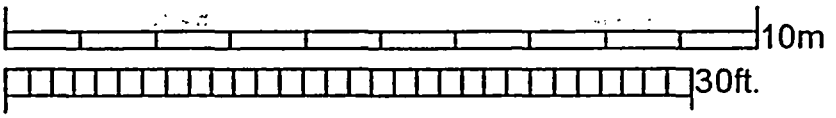




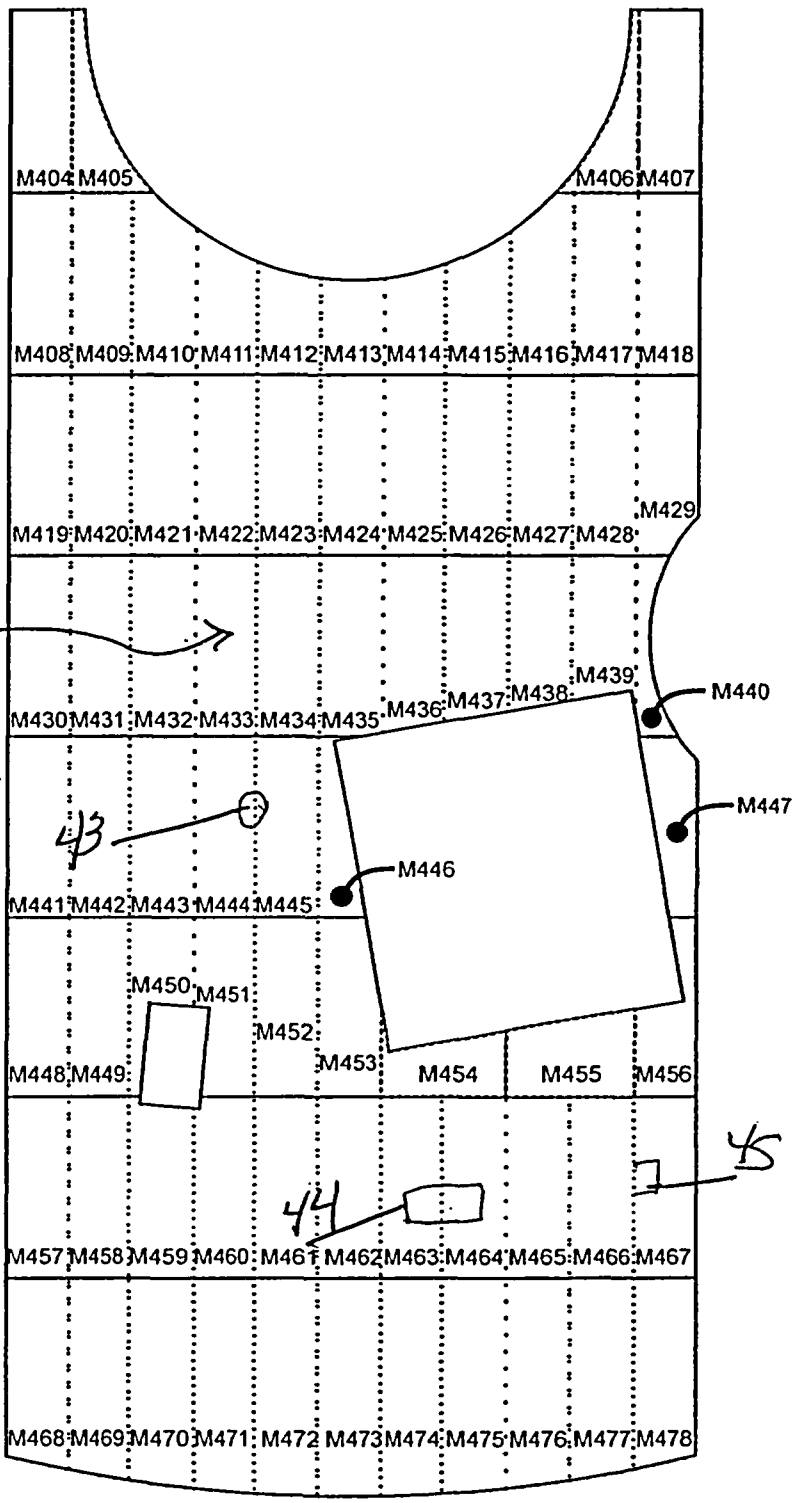
Plates I2-P2

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FA 0100-U2-H
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint H	

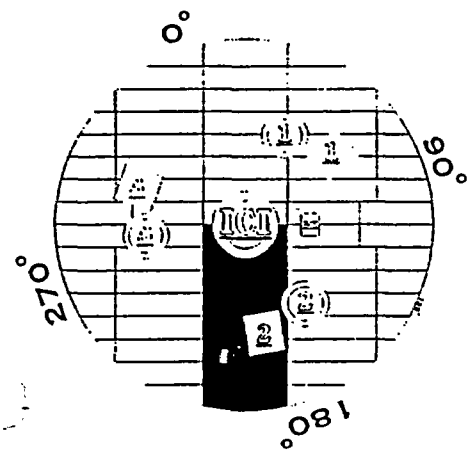
3



43 11.69K
44 9.06K
45 10.23K



NO HOLE IN THIS GRID



Plates I3-P3

Maine Yankee Decommissioning Team | **Maine Yankee Decommissioning Project Survey Map** | Map ID# FA 0100-U2-I

Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey | Survey Area Name: Containment Bldg. Survey Uint 2

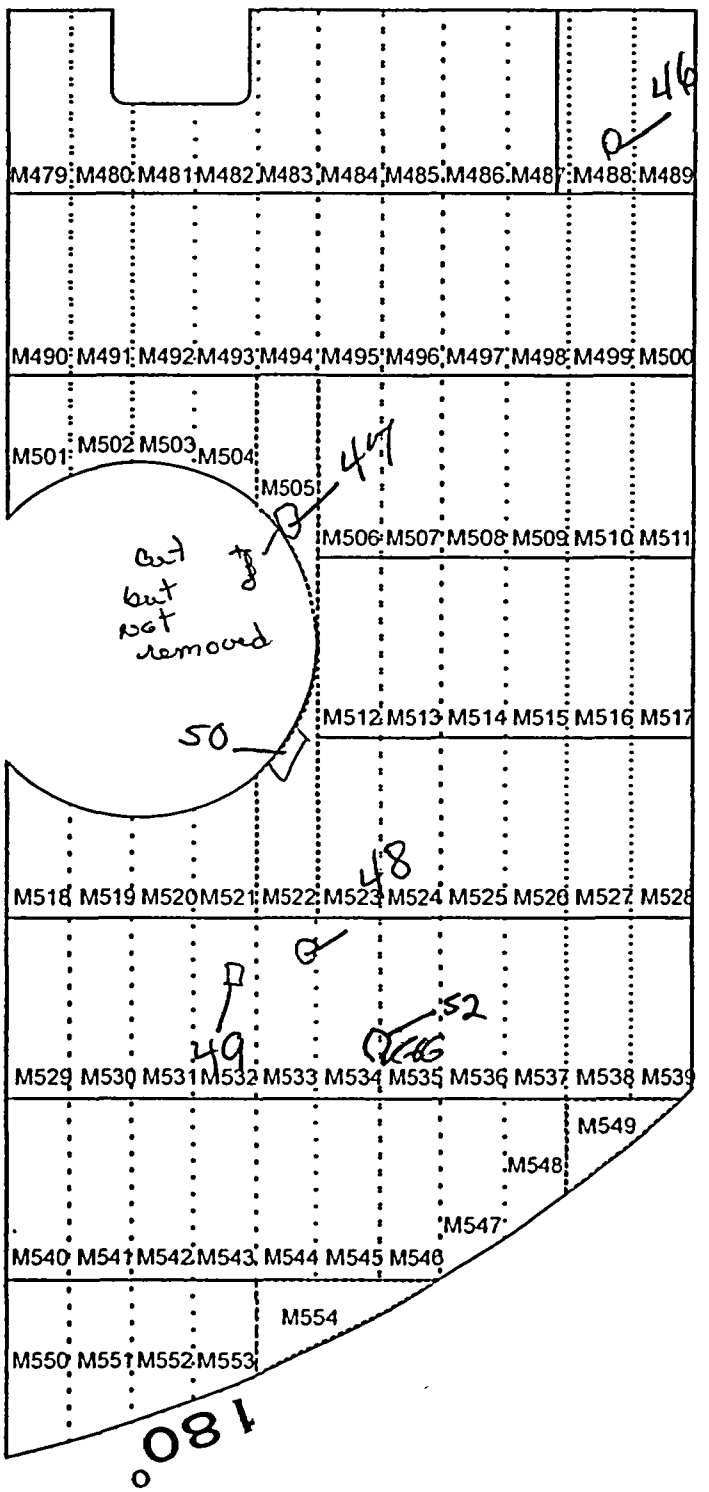
Σ 4

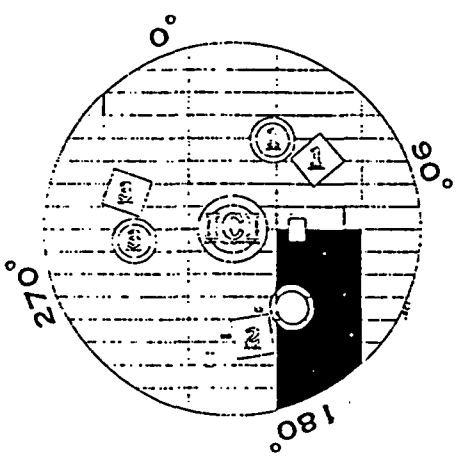
10m

30ft.

46 8.27K
47 8.88K
48 8.67K
49 8.79K
50 10.17K
52 7.40K

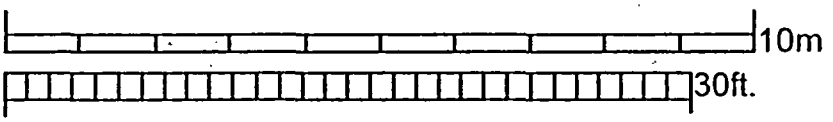
hole
16

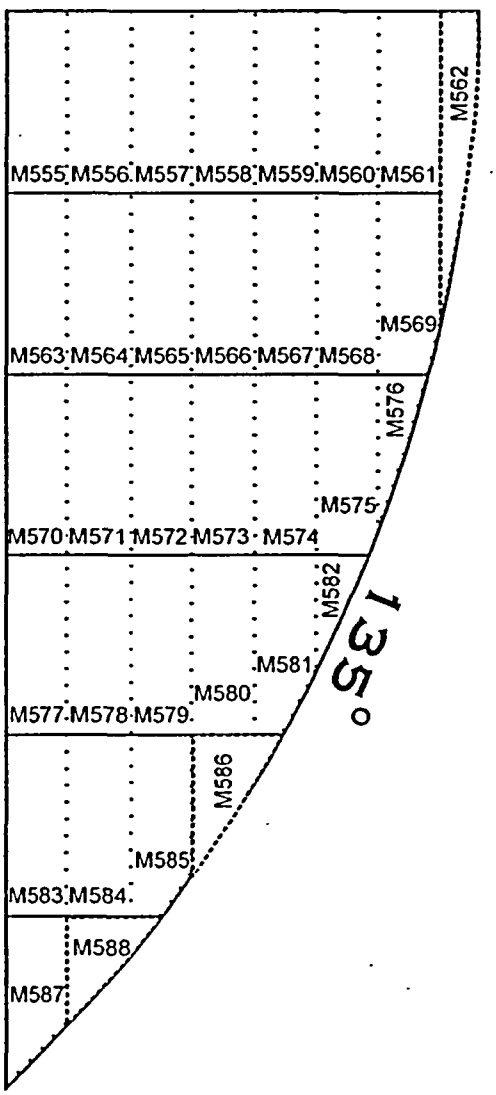


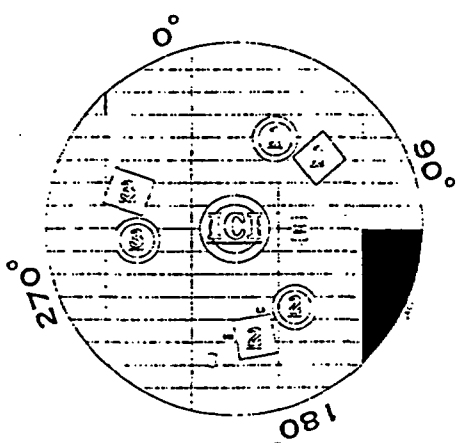


Plates I4-P4

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FA 0100-U2-J
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Bldg. Survey Uint 2	







Plates I5-N5

Maine Yankee
RELIABLE ELECTRICITY SINCE 1972

MAINE YANKEE GENERAL SURVEY RECORD FORM

Map#: MSC-001 Revision#: 00	Date: 6/21/04	Time: 10:10	Reactor Pwr % 0	Tech File Number: 19.200.46.1	RWPs Used: 04-00001	Dose Received: 0 mR

Surveyor Name: (Printed)	Surveyor Name: (Signature)	Location/Job Description:
Paul LeBlanc	Paul LeBl	CTMT FSS

[1] Required R.P. Review / Date: 102215 6/21/04

[2] Required ALARA Supervisor Review / Date:

REASON FOR SURVEY
- ☐ ROUTINE[1]
- ☐ JOB-COVERAGE[1] FSS
- ☐ SHIELDING[1,2]
- ☑ OTHER[1] (Specify): Surveys

INSTRUMENTS USED

MODEL	SERIAL #	CAL DUE	MDA
E-600	2489	11/11/04	N/A
SPA.	725890	11/17/04	N/A
	N		
		A	

CONTAMINATION RESULTS

SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS	SAMPLE #	RESULTS
			N				

KEY:
- Contact exposure rates denoted by: *
- Smear locations denoted by: ⊘
- Boundaries or barriers denoted by: -x-x-
- Dose rates denoted by: •
- Large area smears denoted by: ☐
- Air sample location denoted by: AS-#

Sample Contamination Sheet Use? ☐ YES

Survey Performed on exposed concrete area on R.C.P. #2 Direct Frisk

area # 033 = 11.07 K cpm

area # 034 = 10.18 K cpm

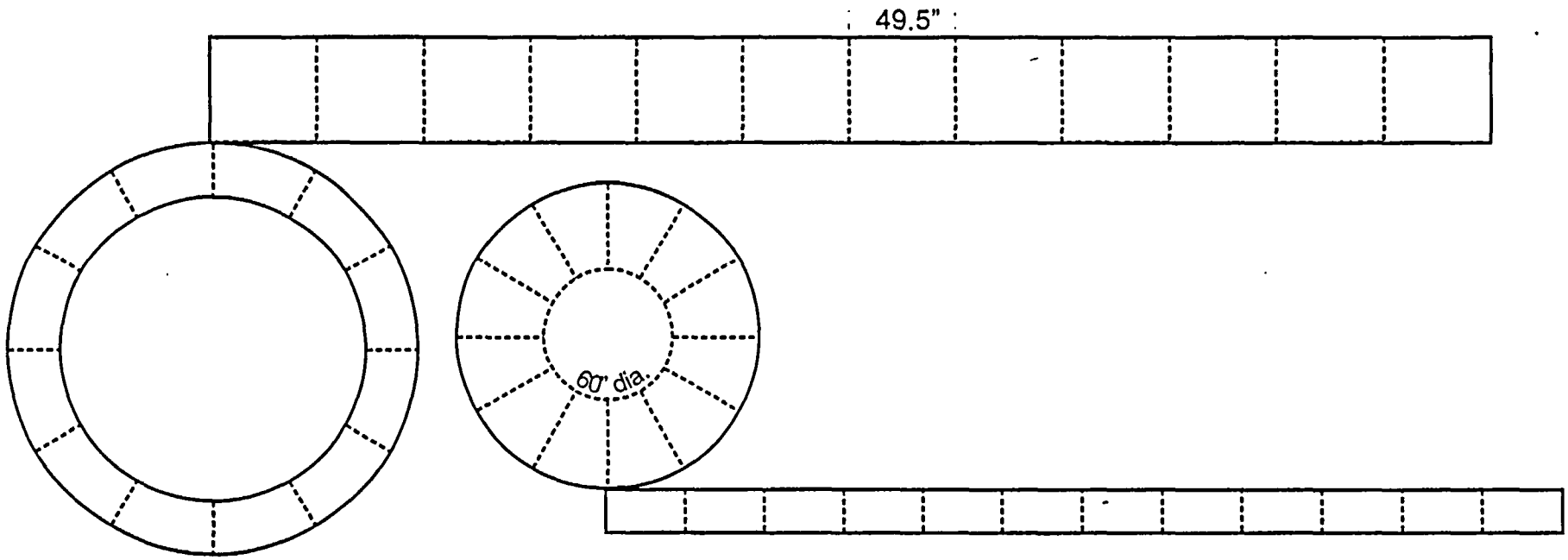
Maine Yankee Decommissioning Team

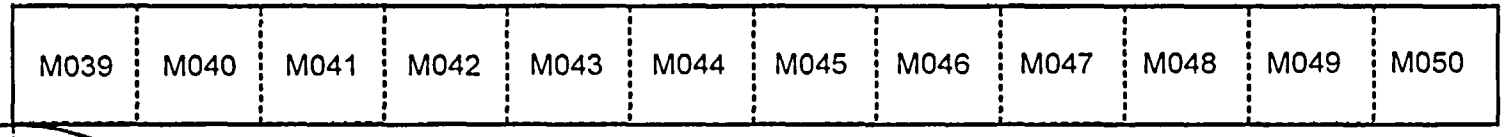
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey

Maine Yankee Decommissioning Project Survey Map

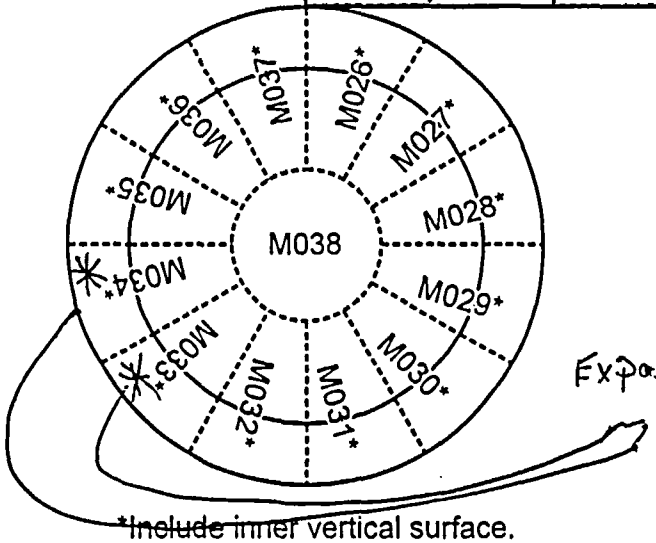
Survey Area Name: Containment Bldg. Survey Unit 3

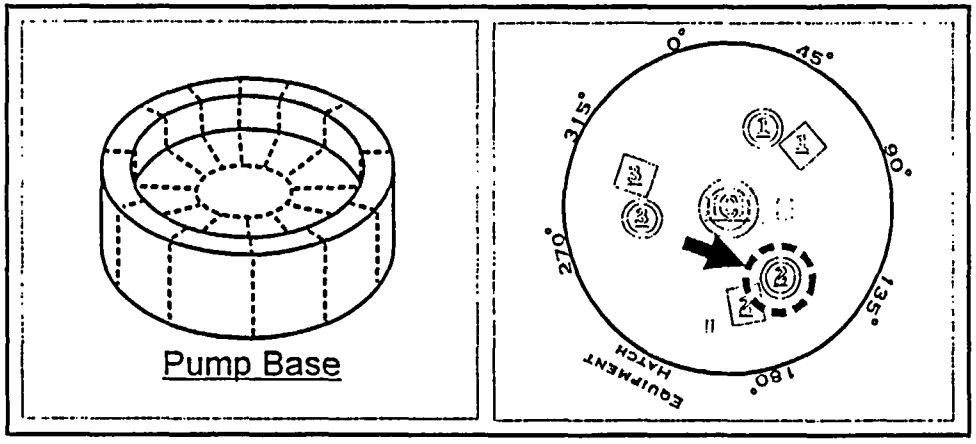
Map ID# FA 0100-U3-P2





Loop 2 Pump Base





Appendix B

Update of

Table 2A - Survey Unit Exceptions - Disposition Cross Reference

From Maine Yankee Letter to USNRC dated October 14, 2004

Table 2A - Survey Unit Exceptions – Disposition Cross Reference

Survey Unit	Exception	Survey Unit Cross Reference	Disposition
FA-1700-SU1	None		
FA-1700-SU2	Portion of the ceiling that was in common with the floor of the 12'6" elevation.	NA	This surface was removed with the demolition of the Spray building.
	The 23" ID penetration through the North wall (containment wall) located at elevation 10' 3".	FA-0100-SU5	The interior of this penetration will be surveyed as part of containment FSS (FA0100 Survey Unit 5). **This penetration was designated M009 on Map FA 0100-U5-SCANS in Survey Package FA-0100-05**
	The 5 penetrations through the South wall.	FR-0111-SU3	These will be surveyed as part of the ~~alleyway East~~ **Yard** West excavation (FR0111 Survey Unit 3). **Except for two 14" PCC penetrations, all pipe sleeves were removed from the wall. The opening, surrounding concrete, and PCC penetrations surveyed in Survey Package FR0111-03. This survey package also contains Map FR0111U3-04 which shows the remaining PCC penetrations as P001 and P002. Additional information of the removed penetrations was provided in Reference 22.**
	The 14" ID penetration at elevation 17' 11".	NA	Penetration was removed with building demolition.
	The two 4" ID penetrations through the floor of the 14' 6" elevation.	FA-1700-SU9	Penetrations were surveyed as part of FA1700 Survey Unit 9.
FA-1700-SU3	Portion of the ceiling that is in common with the floor of the 12'6" elevation.	NA	This surface was removed with the demolition of the spray building
	The 10" ID penetration through the North wall (containment wall) located at elevation 10' 3".		The interior of this penetration will be surveyed as part of containment FSS (FA0100 Survey Unit 5). **This penetration was designated M008 on Map FA 0100-U5-SCANS in survey package FA-0100-05.**
	The 3" ID hole located on the floor of elevation –4'.	FA-1700-SU9	Surveyed as part of FA1700-09.

Survey Unit	Exception	Survey Unit Cross Reference	Disposition
	The 8" ID penetration which ran through the concrete slab that formed the floor of the 14' elevation and a portion of the ceiling for lower elevations of the cubicle.	FA-1700-SU9	Surveyed in Survey Unit 9 of FA1700
	Holes through the cubicle West wall (the wall in common with cubicle E-3A).	FA-1700-SU2	These were surveyed as part of Survey Unit 2 of FA1700
FA-1700-SU4	That portion of the ceiling that was in common with the floor of the 12'6" elevation.	NA	This surface was removed with the demolition of the Spray Building
	The 10" ID and 29" ID penetrations through the North wall (containment wall) located at elevations 12' and 10' 3" respectively.	FA-0100-SU5	The interiors of these penetrations will be surveyed as part of containment FSS (FA0100, Survey Unit 5). **10" ID – This penetration was designated C007 on Map FA 0100-U5-SCANS in survey package FA-0100-05. The penetration was core bored and removed during the remediation process. The resulting hole was a 24" concrete penetration hence the "C" designation.** **29" ID – This penetration was designated M006 on Map FA 0100-U5-SCANS in survey package FA-0100-05.**
	15.5" ID penetration (CS-M-91) located at -14' 9".	FA-1700-SU9	Surveyed as part of FA1700 Survey Unit 9
	The two 3" ID holes located on the floor of elevation –4'.	FA-1700-SU9	Surveyed as part of FA1700 Survey Unit 9
	The four 3" ID penetrations running through the South wall of elevation 14'6" to elevation 12' 6".	FA-1700-SU9	Surveyed as part of FA1700 Survey Unit 9
	Holes through the cubicle West wall (the wall in common with P-61A).	FA-1700-SU3	Surveyed as part of Survey Unit 3 of FA1700.

Survey Unit	Exception	Survey Unit Cross Reference	Disposition
FA-1700-SU5	That portion of the ceiling that was in common with the floor of the 12'6" elevation.	NA	This surface was removed with the demolition of the Spray building
	The 2" ID penetration through the North wall (containment wall) located at elevation 12'.	FA-0100-SU5	The interior of this penetration will be surveyed as part of containment FSS (FA0100, Survey Unit 5). **This penetration was designated C005 on Map FA 0100-U5-SCANS in survey package FA-0100-05. The penetration was core bored and removed during the remediation process. The resulting hole was an 8" concrete penetration hence the "C" designation.**
	The two 4" ID through slab penetrations located at elevation 14'6".	FA-1700-SU9	Surveyed as part of FA1700 Survey Unit 9
	The four 3" ID penetrations located at elevation –16'.	FA-1700-SU9	Surveyed as part of FA1700 Survey Unit 9.
	Holes through the cubicle West wall (the wall in common with P-12A),	FA-1700-SU4	Surveyed as part of FA1700 Survey Unit 4.
FA-1700-SU6	That portion of the ceiling that was in common with the floor of the 12'6" elevation.	NA	This surface was removed with the demolition of the Spray building
	The 10" ID and 23" ID penetrations through the North wall (containment wall) located at elevations 12' and 10' 3" respectively.	FA-0100-SU5	The interiors of these penetrations will be surveyed as part of containment FSS (FA0100, Survey Unit 5). **10" ID – This penetration was designated C003 on Map FA 0100-U5-SCANS in survey package FA-0100-05. The penetration was core bored and removed during the remediation process. The resulting hole was a 24" concrete penetration hence the "C" designation. 23" ID – This penetration was designated M004 on Map FA 0100-U5-SCANS in survey package FA-0100-05.**
	15.5" ID penetration (CS-M-92) located at -14' 9".	FA-1700-SU9	Surveyed as part of FA1700 Survey Unit 9

Survey Unit	Exception	Survey Unit Cross Reference	Disposition
	Holes through the West wall (the wall in common with P-61S).	FA-1700-SU5	Surveyed as part of Survey Unit 5 of FA1700
FA-1700-SU7	That portion of the ceiling that is in common with the floor of the 12'6" elevation.	NA	This surface was removed with the demolition of the Spray Building
	The 2" ID and 10" ID penetrations through the North wall (containment wall) located at elevations 10' 3" and 12' respectively.	FA-0100-SU5	The interiors of these penetrations will be surveyed as part of the containment FSS (FA0100, Survey Unit 5). **2" ID – This penetration was designated C002 on Map FA 0100-U5-SCANS in survey package FA-0100-05. The penetration was core bored and removed during the remediation process. The resulting hole was an 8" concrete penetration hence the "C" designation.** **10" ID – This penetration does not exist. This error was carried forward from the release record to Table 2A of Reference 12.**
	The three 3" penetrations and two 4" penetrations, that ran through the concrete slab that formed the floor of the 14' 6" elevation.	Fa-1700-SU9	Surveyed in Survey Unit 9 of FA1700.
	Holes through the cubicle West wall (the wall in common with P-12B).	FA-1700-SU6	These were surveyed as part of Survey Unit 6 of FA1700.
FA-1700-SU8	That portion of the ceiling that was in common with the floor of the 12'6" elevation.	NA	This surface was removed with the demolition of the Spray Building
	The 23" ID penetration through the North wall (Containment Building wall) located at elevation 10' 3".	FA-0100-SU5	The interior of this penetration will be surveyed as part of the Containment Building FSS (FA0100, Survey Unit 5). **This penetration was designated M001 on Map FA 0100-U5-SCANS in survey package FA-0100-05.**
	The electrical duct bank at elevation 16'6".	NA	Removed during the demolition of the Spray Building.

Survey Unit	Exception	Survey Unit Cross Reference	Disposition
	The 5 penetrations through the South wall.	FR-01101-SU3	Will be surveyed as part of the ~~Alleyway East~~ **Yard West** excavation (FR-01101, Survey Unit 3Area). **Except for two 14" SCC penetrations, all pipe sleeves were removed from the wall. The opening, surrounding concrete, and SCC penetrations surveyed in survey package FR0111-03. This survey package also contains Map FR0111U3-04 which shows the remaining SCC penetrations as P003 and P004. Additional information on the removed penetrations was provided in Reference 22.**
	The 10"and 6" ID penetrations both located at elevation 14' 6".	FA-1700-SU9	Surveyed as part of FA-1700, Survey Unit 9
FA-1700-SU9	None (FA-1700-SU9 is a compilation of miscellaneous remaining structural remnants in the Spray Building.)		