

1. Exelon's handling of tritium, storage, and disposal plans at Braidwood.

The Braidwood Nuclear Power Plant discontinued the normal release of water containing tritium on November 23, 2005. Since that time the plant has installed temporary tanks to store the tritiated water that normally would have been released to the Kankakee River. These tanks are FRAC (fixed rear axle container) tanks used for storage only and not used for transport. Currently there are nineteen (19) of these 21,000 gallon temporary storage tanks on the Braidwood site, and the licensee has plans to add additional tanks as necessary. The temporary tanks are located in two areas within the plant's security fence. One of the areas is outdoors and contains thirteen (13) tanks surrounded by a twelve (12) inch-high berm wall. The other area is located in an onsite storage building which currently contains six (6) tanks that are also surrounded by a similar berm. Any additional tanks the licensee plans to add maybe installed inside this building.

Exelon is in the process of determining a permanent solution of tritium disposal. Considerations include but are not limited to, recycling the tritiated water for nuclear plant makeup water, or recommencing liquid releases through the blowdown line after completing upgrades to the blowdown line and related equipment including the installation of leak monitoring devices, or evaporation of the tritiated water.

NRC's resident and regional inspectors have performed an analysis of the storage tanks and associated compensatory measures. Furthermore, the inspectors continue monitoring the licensee's handling of tritium. These reviews were completed in accordance with the NRC inspection program. The purpose of the inspection program is to ensure public health and safety and to verify that the licensee is in compliance with federal regulations and their licensee. The inspectors' initial analysis of the storage tanks and compensatory measures found them to be in accordance with federal regulations and not to pose a threat to public health.

2. Exelon's sampling methodologies and results.

The Braidwood station has installed monitoring wells both on-site and off-site since the establishment of the plant. Since discovering the tritium levels off-site the plant has placed wells in accordance with the following:

1. Alongside the vaults of the vacuum breakers associated with the circulating water blowdown line.
2. At the perimeter of the tritium plumes associated with past leaks.
3. At a shallow depth of approximately thirteen (13) feet.
4. At a deep depth of approximately thirty (30) feet to determine levels at the shallow aquifer and clay till level.
5. At resident drinking wells in the vicinity of the plant.

NRC has obtained split samples from these wells for independent verification of tritium levels. Below is a listing of the obtained sample results:

H-19

Braidwood Tritium Sample Results			NRC Split Sample Results		
Licensee Sample Designation	Collection Date	pCi/L	pCi/L	NRC Sample ID	Ratio Licensee to NRC ¹
P-1	12-01-05	2484	2930	NRC-1-R3	0.848
P-4	12-01-05	33041	33630	NRC-2-R3	0.982
P-5	12-01-05	6621	6820	NRC-3-R3	0.971
P-6	12-01-05	450	190	NRC-4-R3	Statistically Insignificant
P-7	12-01-05	1210	1200	NRC-5-R3	1.008
P-8	12-01-05	2998	2720	NRC-6-R3	1.102
RW-1	12-01-05	2050	2650	NRC-7-R3	0.774
RW-2	12-01-05	33736	34760	NRC-8-R3	0.971
BL-17	12-01-05	25	240	NRC-9-R3	Statistically Insignificant
BL-18	12-01-05	108	150	NRC-10-R3	Statistically Insignificant
BL-19	12-01-05	37	300	NRC-11-R3	Statistically Insignificant
PW-9	12-05-05	142	-340	NRC-12-R3	Statistically Insignificant
PW-11	12-05-05	99	100	NRC-13-R3	Statistically Insignificant
PW-4	12-02-05	43	200	NRC-14-R3	Statistically Insignificant
SW-4	12-02-05	83	210	NRC-15-R3	Statistically Insignificant
PW-8	12-03-05	1151	1490	NRC-16-R3	0.772
D-3	12-02-05	137	-60	NRC-17-R3	Statistically Insignificant
RW-3	12-02-05	197	140	NRC-18-R3	Statistically Insignificant
RW-4	12-02-05	380	420	NRC-19-R3	0.905

RW-4	12-02-05	380	420	NRC-19-R3	0.905
P-2	12-02-05	4344	2750	NRC-20-R3	1.580
P-3	12-02-05	3258	2470	NRC-21-R3	1.319
VB3-7	12-02-05	169	-90	NRC-22-R3	Statistically Insignificant
VB3-8	12-02-05	171	110	NRC-23-R3	Statistically Insignificant
PW-1	11-30-05	-26	200	NRC-24-R3	Statistically Insignificant
PW-2	11-30-05	48	180	NRC-25-R3	Statistically Insignificant
PW-3	11-30-05	25	-250	NRC-26-R3	Statistically Insignificant
PW-8	12-06-05	1524	1020	NRC-27-R3	1.494
SW-1	11-30-05	2464	2480	NRC-28-R3	0.994
SW-2	11-30-05	2347	2490	NRC-29-R3	0.943
G-1	12-06-05	133	290	NRC-30-R3	Statistically Insignificant
G-2	12-06-05	87	230	NRC-31-R3	Statistically Insignificant
G-3	12-06-05	81	140	NRC-32-R3	Statistically Insignificant
P-9	12-05-05	1346	-40	NRC-33-R3	Statistically Insignificant
P-10	12-05-05	1934	2120	NRC-34-R3	0.912
P-11	12-05-05	1681	1770	NRC-35-R3	0.950
P-12	12-05-05	1535	1400	NRC-36-R3	1.096
S-1	12-05-05	-21	-70	NRC-37-R3	Statistically Insignificant
S-2	12-05-05	95	110	NRC-38-R3	Statistically Insignificant

S-3	12-05-05	145	140	NRC-39-R3	Statistically Insignificant
S-4	12-05-05	1280	1230	NRC-40-R3	1.041
S-5	12-05-05	2023	2190	NRC-41-R3	0.924
S-6	12-05-05	679	490	NRC-42-R3	1.386
D-4	12-06-05	91	-30	NRC-43-R3	Statistically Insignificant
D-2	12-05-05	125	-40	NRC-44-R3	Statistically Insignificant
P-4	12-06-05	25311	30020	NRC-45-R3	0.843
P-8	12-06-05	2212	2500	NRC-46-R3	0.885
VB2-6	12-05-05	2348	1640	NRC-47-R3	1.432
VB3-4	12-05-05	43708	42580	NRC-48-R3	1.026
MW-113	12-05-05	3598	3840	NRC-49-R3	0.937
NRC Sample			39400	NRC-50-R3	
D-5	12-02-05	73	280	NRC-51-R3	Statistically Insignificant
NRC Sample			280	NRC-52-R3	
NRC Sample			210	NRC-53-R3	
NRC Sample			150	NRC-54-R3	
PW-5	12-07-05	9	310	NRC-55-R3	Statistically Insignificant
PW-10	12-07-05	72	210	NRC-56-R3	Statistically Insignificant
PW-12	12-07-05	44	190	NRC-57-R3	Statistically Insignificant
PW-7	12-07-05	-58	170	NRC-58-R3	Statistically Insignificant

VB3-9D	12-13-05	21715	21720	NRC-61-R3	1.000
MW-113D	12-14-05	4835	4810	NRC-62-R3	1.005
P-2D	12-12-05	2599	2480	NRC-63-R3	1.048
RW-2@10'	12-13-05	54111	55920	NRC-64-R3	0.968
RW-2@20'	12-13-05	171166	160400	NRC-65-R3	1.067
RW-2@25'	12-13-05	246442	281800	NRC-66-R3	0.875
NRC Sample	12-27-05		1310	NRC-67-R3	
NRC Sample	12-08-05		-30	NRC-68-R3	
NRC Sample	12-08-05		1360	NRC-69-R3	

¹The term Statistically Insignificant applied when sample results are near the Lower Limit of Detection (LLD).

²The negative numbers indicated radioactivity statically indistinguishable from background radiation.

In addition to the above results, the NRC has also analyzed a select number of samples for gamma-emitting radioactivity, strontium-90 and technitium-99. Based on our own analysis, no radioactivity other than tritium was identified.

3. NRC's agency plan related to the Braidwood tritium issue.

On February 7, 2006, Exelon made a written commitment to the NRC, that they would suspend liquid effluent releases through the blowdown line. As part of this written commitment Exelon will communicate with the NRC prior to any future radioactive releases through the blowdown line. The NRC confirmed these commitments in a letter dated February 17, 2006. In addition, to ensure that the licensee's operates in a manner to ensure the protection of the public and in accordance with federal regulations and their license, the NRC continuously assesses the licensee's performance in accordance with the NRC oversight process.

As part of the NRC's oversight process, inspectors, in part, evaluate the licensee's performance through an inspection process. Specifically for the issues related to tritium at Braidwood, the inspectors initially used Inspection Procedure 71153, Event Followup. After the initial aspects of the situation were understood, the inspectors utilized other inspection procedures such as Inspection Procedures 71122.01, Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems and 71122.03, Radiological Environmental Monitoring Program (REMP) and

Radioactive Material Control Program. These procedures are available on the NRC's public website.

The NRC has been and will continue to verify the licensee's activities related to the blowdown line by inspecting the following: leak protection (inspection/maintenance of vacuum breakers), installation of a leak detection system, and an assessment of the release process. This is not an inclusive list by which the NRC will evaluate future discharges. In addition, the NRC will utilize the inspection program to inspect other aspects related to Exelon's ability to prevent, detect, and respond to any leakage of the blowdown line.

The results of the NRC inspection activities are documented in publically available inspection reports. The initial inspection activities were documented in NRC Inspection Reports 05000456/20050010; 05000457/20050010 issued on February 6, 2006. The current inspection activities will be documented in NRC Inspection Reports 05000456/2005008; 05000457/2006008.