Compact Waste Facility
Disposal Capacity Supplemental Report

Purpose

The purpose of this report is to document the updated capacity needs for the Compact waste disposal facility (CWF). The CWF is currently licensed for 2.3 million cubic feet and 3.89 million curies for a 15 year license term. These licensed volumes and radioactive source term have been thoroughly reviewed and are protective of human health and the environment. The results of our analysis indicate more than adequate capacity for operational low-level radioactive waste (LLRW), reserve capacity for decommissioning LLRW, and excess capacity of approximately 1.1 million cubic feet and 1.5 million curies with full decommissioning reserve.

Background Information

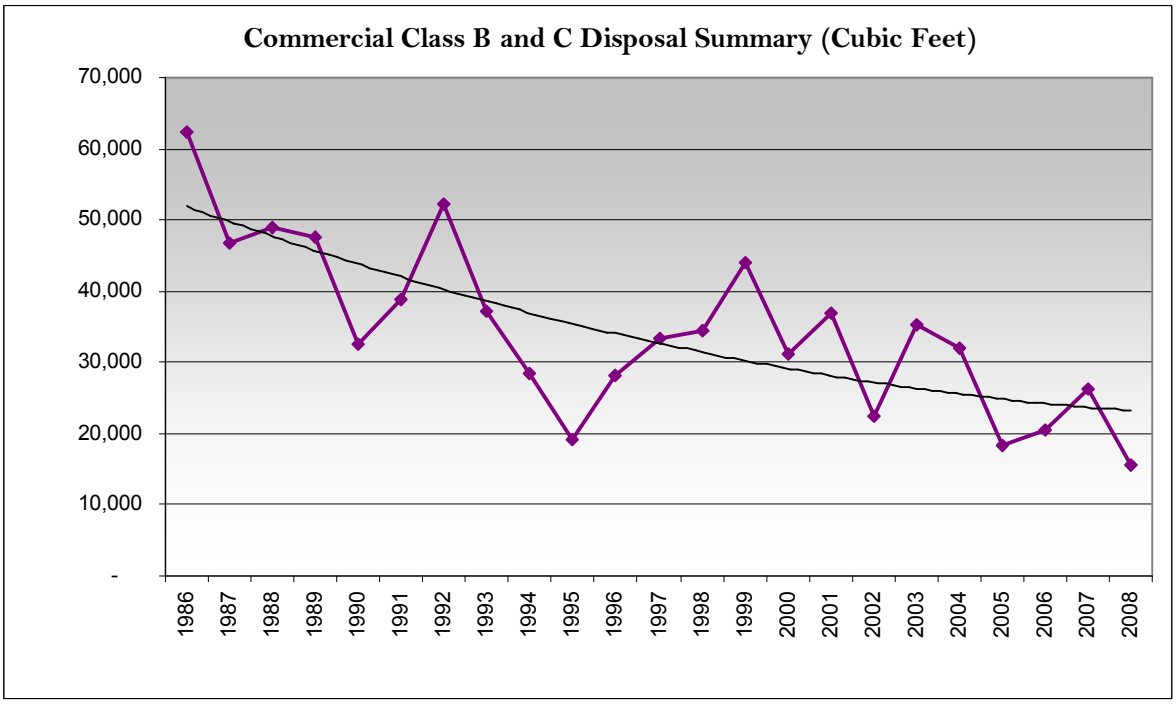
The Texas Commission on Environmental Quality (TCEQ) issued the CWF license. As a part of the pre-licensing and licensing activity, the Texas Natural Resource Conservation Commission (a predecessor agency to TCEQ) generated a report - *Texas Compact Low-Level Radioactive Waste Generation Trends and Management Alternatives Study, 2000, Rogers & Associates Engineering Branch URS Corporation* (2000 Study). The 2000 Study provided the necessary foundation for licensing, design, operations, and need for the compact generators in Texas and Vermont. The report was completed in 2000 and relied on LLRW volume and radioactivity estimates from compact generators, as well as previous studies conducted in the late 1980s and early 1990s. Where survey data were not provided for later reports, the estimates of volume and radioactivity were derived from the earlier studies.

It is critical and appropriate to update the disposal capacity expected to be needed by Compact generators given that 10 years have passed since the last 2000 Study and up to 25 years have passed since some of the estimates (upon which later estimates were based) were developed. A disposal capacity update is particularly necessary and timely given the dramatic reductions in the nuclear industry LLRW generation rates, the present requirement of the Texas Low-Level Radioactive Waste Disposal Compact Commission (Texas Compact Commission) to develop current waste volume estimates, and the planned opening of the CWF in late 2011.

Figure 1 below depicts the Department of Energy's data on disposal volumes of Class B and C waste over the last 25 years, and illustrates the dramatic reductions in waste volumes. Disposal volumes have been reduced by approximately 77% since 1986 and by more than 50% since the 2000 Study waste volume estimates were completed.

These reductions in waste generation volumes are primarily the result of operational enhancements and better practices at the LLRW generating facilities. Additionally, many advances in waste volume reduction, characterization, and sorting and segregating activities are being effectively employed to reduce disposal volumes.

Figure 1 Commercial Class B and C Disposal Volume



Source: U.S.DOE MIMS database

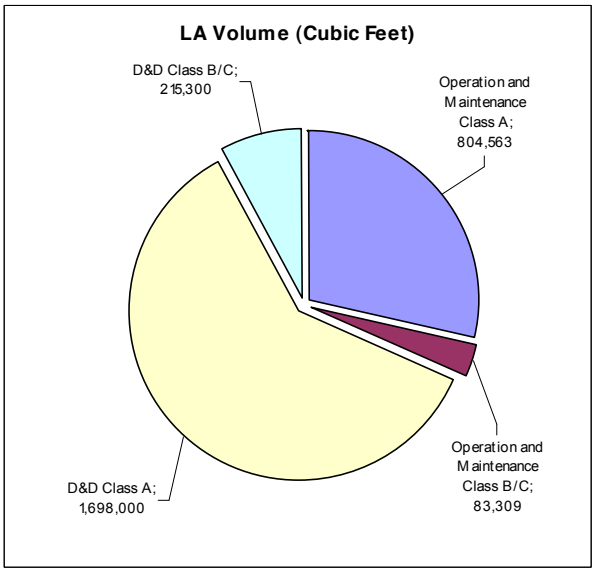
License Application Volume and Radioactivity

The 2000 Study stated that Rogers and Associates Engineering (RAE) "*projected the LLRW volume that would require management over the next 35 years to be about 2.7 million cubic feet. Of this, only about 660,000 cubic feet is operational LLRW, the balance resulting from nuclear power plant decommissioning activities. Nuclear electric utilities of the Texas Compact generate about 70 percent of all operational LLRW volume, with academic generators adding another 14 percent of the volume. Nuclear electric utilities of the Texas Compact generate over 95 percent of the total radioactive inventory generated.*"
(Note: WCS uses the performance assessment volume rounded to 2.8 million cubic feet)

When the WCS application for a LLRW waste disposal license was prepared in 2003, the waste volume estimates in the 2000 Study were used as a baseline to develop the waste volume estimates in the license application (LA). Ultimately, the amount of LLRW included in the LA was 2.8 million cubic feet. At the time, this was the best available estimate. Since then, WCS has refined the LLRW volume estimates, and its review indicates that the volumes in the 2000 study overestimated the required Compact volumes.

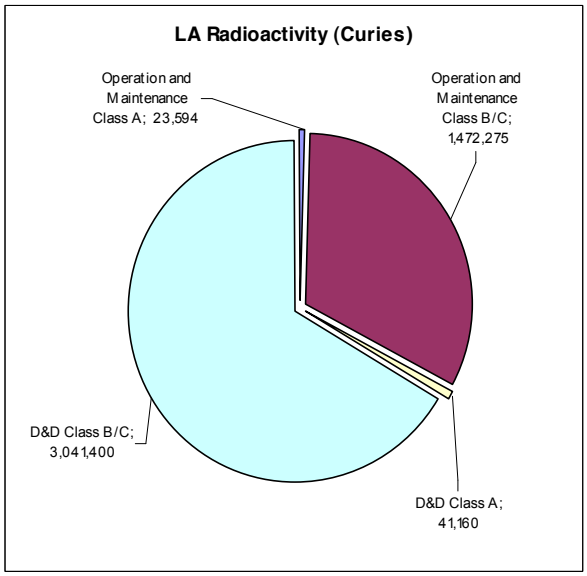
Using the waste volume data from the 2000 study, Figures 2 and 3 depict the contributions to volume and radioactivity by the class of waste and the waste generating activity from the WCS LA, which was based on the RAE 2000 Study. Clearly, the decontamination and decommissioning (D&D) of the five Compact reactors is the most significant contributor to the volume and curie capacity needs.

Figure 2 LA Volume



Source: LA Vol. 2 App. 8 Table 8.2-3

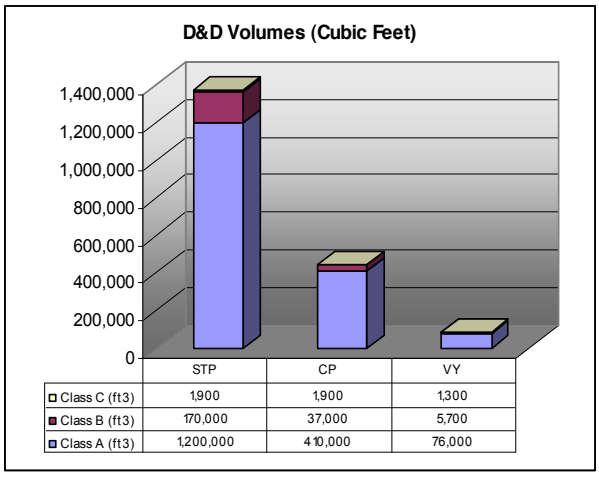
Figure 3 LA Radioactivity



Source: LA Vol. 2 App. 8 Table 8.2-5

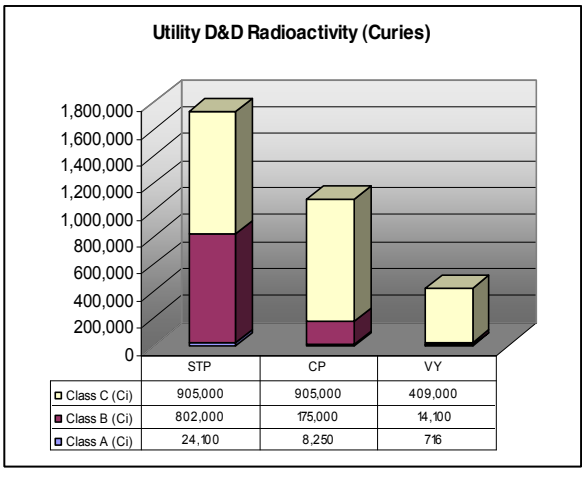
Figures 4 and 5 depict the contribution to volume and radioactivity from decommissioning from the South Texas Plant (STP), Comanche Peak (CP), and Vermont Yankee (VY) by class of waste. As stated previously, the 2000 Study relied on information available at the time. Based on updated information from the utility reports to the Texas Compact Commission, the current LLRW disposal needs related to decommissioning the facilities has been significantly reduced. Both Comanche Peak and South Texas are two unit Pressurized Water Reactors of similar size and Vermont Yankee is a single unit Boiling Water Reactor.

Figure 4 LA D&D Volume by Utility



Source: LA Vol. 2 App. 8 Table 8.2-3

Figure 5 LA D&D Radioactivity by Utility



Source: LA Vol. 2 App. 8 Table 8.2-5

More up-to-date information is available from recent operational history (2000 to 2010), updated reporting requirements associated with the D&D of nuclear facilities, and the associated NRC review of decommissioning funds.

The needs associated with other small compact generators, such as medical facilities, laboratories and manufacturing facilities also require updating; however, the proportion and effect of these updates have a much lower effect on the capacity needs assessment.

Updated Projections

Waste Control Specialists has revisited the Texas Compact generator waste volume and radioactivity projections. Our updated analysis indicates that the volumes and activities estimated in the 2000 study are overestimated based on the current state of the art in radioactive waste management.

The updated information is the result of evaluating several sources that maintain more current LLRW disposal information. The most significant sources of new information are the more robust information provided directly from the Texas Compact utility generators, analysis of data maintained by the U.S. Department of Energy Manifest Information Management System (MIMS) database, and updated decommissioning reports from the Texas Compact utilities that was also provided to the NRC.

Key Assumptions for the Analysis Update

Several key assumptions and processes apply in the conduct of this analysis update. They are:

1. Utility operations and maintenance waste types and volumes are revised based upon updates from the three Texas Compact utilities. Consistent with the LA, disposal volumes are used as the most appropriate measure of disposal capacity needed.
2. All five reactors are assumed to be operational until 2030 at which time they all shutdown and begin prompt decommissioning over the next 15 years.
3. This analysis update represents the most conservative case for both volume and radioactivity.
4. Decommissioning projections:
    a. Vermont Yankee (VY), South Texas Plant (STP) and Comanche Peak (CP) projected volumes are based on 2009 information provided by the utilities to the Texas Compact Commission. VY volumes have significantly increased over the 2000 Study. STP volumes are significantly reduced, and along with CP volumes are consistent with the guidance in the NRC Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors (NUREG-1713). Significant advances have been made with the completion of decommissioning of the first reactors during the last ten years. This actual decommissioning experience has been incorporated in the NRC guidance, representing a much more realistic and consistent expectation versus the 2000 Study.

    b. These updates result in higher waste volumes from VY, slightly reduced volumes from CP, and significantly reduced volumes from STP decommissioning as compared to the LA.
5. Volumes and activity attributed to non-utility generators have not been changed in this updated projection as the original information appears consistent with historical data and no detailed updates are available.

6. Two significant changes drive the updates to the radioactive source term (curies) requirements of the Texas Compact generators:

    a. Approximately 2,500 cubic feet waste was projected by the LA in the first 3 years of CWF operations with a corresponding 1.3 million curies. These waste volumes are replaced with current estimates from VY which are significantly reduced.

    b. Almost 2,000,000 cubic feet and associated curies were projected in the LA from decommissioning. The utilities updated estimate reduced the volume by more than a factor of two with corresponding reductions in curies.

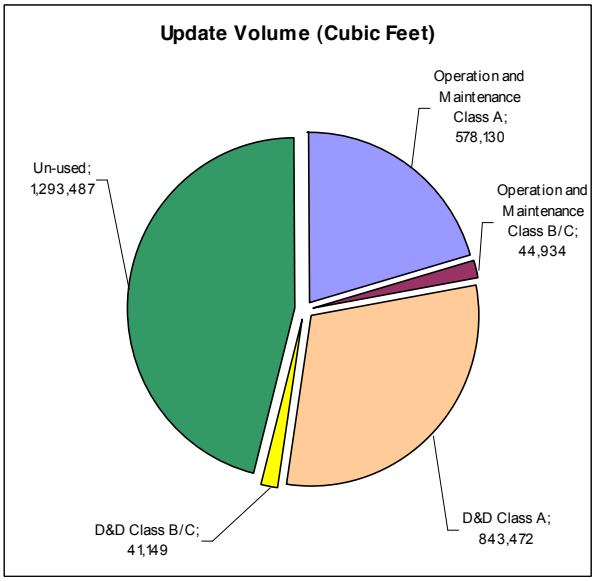
Variance from 2000 Study

The total updated projected need for the analyzed 35-year life of the CWF from Texas Compact Generators is updated to an estimated 1.5 M cubic feet and 2.5 M curies under the most conservative assumptions. This is compared to the original estimated 35-year capacity of 2.8 M cubic feet and 4.6 M curies as analyzed in the LA. Data comparison for the LA and the 2010 update are presented in Attachments 1 and 2.

For the 15-year license term, the updated need for Texas Compact generators is 1.2 M cubic feet and 2.4 M curies with full decommissioning reserve. When compared to the existing license (2.3 M cubic feet and 3.9M curies), this results in about 1.1 M cubic feet and 1.5 M curies of unused capacity in the current license, allowing for full decommissioning reserve.

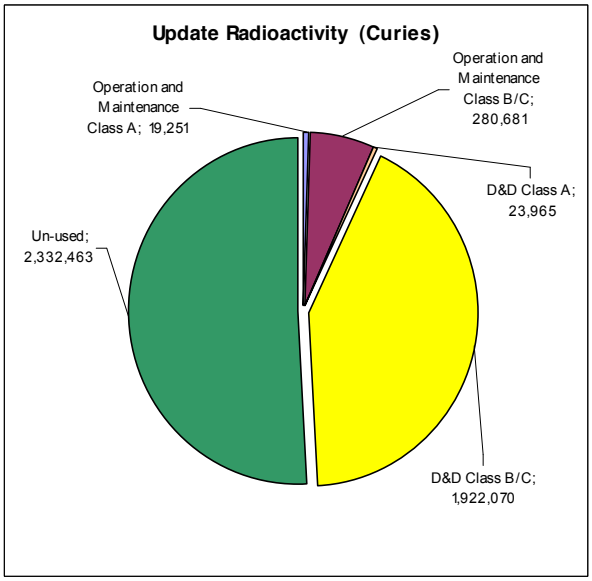
Figures 6 and 7 depict the required and unused volume and radioactivity by the class of waste and the generating activity based on the originally estimated 35 year capacity of 2.8 M cubic feet and 4.6 M curies.

Figure 6 Update Volume



Source: Compact Generator Analysis Update, 2009 TCC Reports

Figure 7 Update Radioactivity



Source: DOE MIMS for Operational Waste, LA for D&D Waste

Risk and Contingency

Potential risk factors were identified that could result in variances with the updated projected volumes and radioactivity. The assumptions used in the disposal capacity update describe the current licensed operating life of STP and CP and assume that VY will operate an additional 20 years. The update also assumes decommissioning of all five currently operating Texas Compact reactors within the 35-year life of the CWF. This is the most conservative case that can be put forward to describe capacity needs during a 35-year life, which is the same life assumed by WCS in its license application. Additional operating and decommissioning volumes and curies from newly constructed reactors is not included because waste streams generated from new reactors were not considered at the time of the application, and decommissioning of the new units will happen well beyond the WCS license application term.

Several potential changes could effect the updated projections, resulting in positive variances of more volume and curies available for disposal. The possible changes are summarized below:

1. Continued nuclear industry trend of lower waste generation rates for both operational and decommissioning LLRW. All evidence supports the notion that small and large generators will continue to implement methods and technologies to reduce the amount of waste generated. **The effect would be increased capacity.**
2. License amendment or renewal requests. License amendments or renewals could allow more efficient disposal methods, expand physical capacity and allow additional radioactivity. **The net effect would be significant increased capacity.**
3. Use of actual data collected from active operations to perform modeling and analysis required by regulations. The actual volume and curies disposed will be tracked and used to continually update the models used to demonstrate protectiveness of the CWF to health, the environment, and the public. It is anticipated that the actual data will be more favorable than the assumptions in the LA due to the conservatism used to demonstrate protectiveness during the LA process. **The effect would be increased capacity**.
4. Decommissioning of the reactors is delayed as currently projected by each of the utilities. Two effects are probable. First, delay will allow decay of short lived isotopes and use less of the radioactive source term (curie limit) making additional curies available. Second, delay may extend the actual decommissioning past the 35 year life of the CWF. **The net effect would be increased capacity.**

Attachment 1

License Application and 2010 Update Volumes

Annual Volumes In Application

Generator Class	Stream	Class	TOTAL	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Non Utility	ABSLIQD	A	22,400	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640
Non Utility	BIOWAST	A	9,450	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
Non Utility	COTRASH	A	33,600	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
Non Utility	HIGHACT	A	5,600	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Non Utility	LOWASTE	A	6,300	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
Non Utility	NCTRASH	A	87,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Non Utility	NCTRASH	B	2,030	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Non Utility	SOURCES	A	10,850	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310
Non Utility	SOURCES	B	2,065	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
Non Utility	SOURCES	C	4,550	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Utility	CONFDSL	A	36,000	12,000	12,000	12,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	CONFDSL	B	27,600	9,200	9,200	9,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	COTRASH	A	54,480	14,000	14,000	14,000	4,700	470	470	470	470	470	470	470	470	470	470	470	470	470	470	240	240	240	240	240	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	DECONRS	A	1,350	450	450	450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FLDRFSL	A	3,355	270	270	270	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	89	89	89	89	89	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	A	228	76	76	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	C	450	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NCTRASH	A	498,500	53,000	53,000	53,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	7,900	7,900	7,900	7,900	7,900	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NFRCOMP	C	2,550	850	850	850	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	PROCFIL	C	19,340	1,800	1,800	1,800	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	88	88	88	88	88	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWCUPRS	B	174	58	58	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	A	11,550	1,100	1,100	1,100	420	420	420	420	420	420	420	420	420	420	420	420	420	420	420	390	390	390	390	390	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	B	24,550	2,200	2,200	2,200	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	290	290	290	290	290	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	SSYSRES	A	23,400	2,300	2,300	2,300	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	D&D	A	1,698,000	-	-	-	13,000	13,000	13,000	13,000	13,000	13,000	-	-	-	-	-	-	-	-	-	170,000	170,000	170,000	220,000	220,000	220,000	220,000	46,000	46,000	46,000	46,000	46,000	-	-	-	-	-
Utility	D&D	B	210,200	-	-	-	950	950	950	950	950	950	-	-	-	-	-	-	-	-	-	24,000	24,000	24,000	28,000	28,000	28,000	28,000	4,100	4,100	4,100	4,100	4,100	-	-	-	-	-
Utility	D&D	C	5,100	-	-	-	220	220	220	220	220	220	-	-	-	-	-	-	-	-	-	270	270	270	480	480	480	480	210	210	210	210	210	-	-	-	-	-
TOTAL			2,801,172	102,721	102,721	102,721	47,797	43,567	43,567	43,567	43,567	43,567	29,397	29,397	29,397	29,397	29,397	29,397	29,397	29,397	29,397	208,534	208,534	208,534	262,744	262,744	253,747	253,747	55,577	55,577	55,577	55,577	55,577	5,267	5,267	5,267	5,267	5,267

2010 Annual Volume Update With Decommissioning Volumes

Generator Class	Stream	Class	TOTAL	2010*	2011**	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Non Utility	ABSLIQD	A	21,760	-	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640
Non Utility	BIOWAST	A	9,180	-	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
Non Utility	COTRASH	A	32,640	-	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
Non Utility	HIGHACT	A	5,440	-	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Non Utility	LOWASTE	A	6,120	-	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
Non Utility	NCTRASH	A	85,000	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Non Utility	NCTRASH	B	1,972	-	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Non Utility	SOURCES	A	10,540	-	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310
Non Utility	SOURCES	B	2,006	-	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
Non Utility	SOURCES	C	4,420	-	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Utility	CONFDSL	A	3,841	-	549	3,292	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	CONFDSL	B	2,945	-	421	2,524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	COTRASH	A	14,540	-	640	3,841	3,607	473	480	378	378	378	378	378	378	378	378	367	367	367	367	503	503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	DECONRS	A	144	-	21	123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FLDRFSL	A	2,189	-	12	74	107	141	143	113	113	113	113	113	113	113	113	109	109	109	109	187	187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	A	24	-	3	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	C	48	-	7	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NCTRASH	A	297,155	-	2,423	14,540	15,349	20,134	20,407	16,080	16,080	16,080	16,080	16,080	16,080	16,080	16,080	15,634	15,634	15,634	15,634	16,563	16,563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NFRCOMP	C	272	-	39	233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	PROCFIL	C	12,063	-	82	494	691	906	918	724	724	724	724	724	724	724	724	704	704	704	704	184	184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWCUPRS	B	19	-	3	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	A	7,176	-	50	302	322	423	429	338	338	338	338	338	338	338	338	328	328	328	328	818	818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	B	15,509	-	101	604	844	1,107	1,122	884	884	884	884	884	884	884	884	860	860	860	860	608	608	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	SSYSRES	A	14,325	-	105	631	844	1,107	1,122	884	884	884	884	884	884	884	884	860	860	860	860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	D&D	A	843,472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65,352	65,352	65,352	65,352	65,352	61,804	61,804	61,804	61,804	61,804	41,538	41,538	41,538	41,538	41,538
Utility	D&D	B	37,935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	814	814	814	814	814	1,698	1,698	1,698	1,698	1,698	5,075	5,075	5,075	5,075	5,075
Utility	D&D	C	3,214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115	115	115	115	115	344	344	344	344	344	184	184	184	184	184
TOTAL			1,433,947	-	9,723	32,003	27,032	29,559	29,888	24,667	24,667	24,667	24,667	24,667	24,667	24,667	24,667	24,130	24,130	24,130	24,130	24,130	24,130	71,548	71,548	71,548	71,548	71,548	69,113	69,113	69,113	69,113	69,113	52,064	52,064	52,064	52,064	52,064

Attachment 2

License Application and 2010 Update
Radioactivity Detail

Annual Radioactivity (Ci) In Application

Generator Class	Stream	Class	TOTAL	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Non Utility	ABSLIQD	A	5,600	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Non Utility	BIOWAST	A	49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Non Utility	COTRASH	A	525	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Non Utility	HIGHACT	A	385	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Non Utility	LOWASTE	A	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non Utility	NCTRASH	A	770	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Non Utility	NCTRASH	B	525	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Non Utility	SOURCES	A	8,750	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Non Utility	SOURCES	B	2,345	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
Non Utility	SOURCES	C	25,550	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730
Utility	CONFDSL	A	390	130	130	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	CONFDSL	B	177	59	59	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	COTRASH	A	219	63	63	63	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Utility	DECONRS	A	1,290	430	430	430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FLDRFSL	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	A	26	9	9	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	C	165	55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NCTRASH	A	2,480	260	260	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NFRCOMP	C	1,350,000	450,000	450,000	450,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	PROCFIL	C	55,900	5,200	5,200	5,200	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	260	260	260	260	260	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWCUPRS	B	63	21	21	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	A	3,100	250	250	250	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	110	110	110	110	110	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	B	37,550	3,300	3,300	3,300	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	430	430	430	430	430	-	-	-	-	-	-	-	-	-	-	-	-
Utility	SSYSRES	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	D&D	A	41,160	-	-	-	120	-	-	120	120	120	-	-	-	-	-	-	-	-	-	3,400	3,400	3,400	4,400	4,400	4,400	4,400	4,400	9,200	920	920	920	920	-	-	-	-
Utility	D&D	B	959,400	-	-	-	2,400	2,400	2,400	2,400	2,400	2,400	-	-	-	-	-	-	-	-	-	110,000	110,000	110,000	130,000	130,000	130,000	130,000	130,000	19,000	19,000	19,000	19,000	19,000	-	-	-	-
Utility	D&D	C	2,082,000	-	-	-	68,000	-	-	68,000	68,000	68,000	-	-	-	-	-	-	-	-	-	130,000	130,000	130,000	230,000	230,000	230,000	230,000	230,000	100,000	100,000	100,000	100,000	100,000	-	-	-	-
TOTAL			4,578,429	461,048	461,048	461,048	76,313	8,193	8,193	76,313	76,313	76,313	5,793	5,793	5,793	5,793	5,793	5,793	5,793	5,793	5,793	245,513	245,513	245,513	366,513	366,513	365,672	365,672	365,672	129,472	121,192	121,192	121,192	121,192	1,272	1,272	1,272	1,272	1,272
UTILITY ONLY TOTAL				459,777	459,777	459,777	75,042	6,922	6,922	75,042	75,042	75,042	4,522	4,522	4,522	4,522	4,522	4,522	4,522	4,522	4,522	244,241	244,241	244,241	365,241	365,241	364,400	364,400	364,400	128,200	119,920	119,920	119,920	119,920	-	-	-	-	-

2010 Annual Curie Update With Decommissioning Curies

Generator Class	Stream	Class	TOTAL	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Non Utility	ABSLIQD	A	5,440	-	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Non Utility	BIOWAST	A	48	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Non Utility	COTRASH	A	510	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Non Utility	HIGHACT	A	374	-	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Non Utility	LOWASTE	A	10	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non Utility	NCTRASH	A	748	-	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Non Utility	NCTRASH	B	510	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Non Utility	SOURCES	A	8,500	-	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Non Utility	SOURCES	B	2,278	-	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
Non Utility	SOURCES	C	24,820	-	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730
Utility	CONFDSL	A	411	-	59	353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	CONFDSL	B	1,264	-	181	1,083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	COTRASH	A	5	-	0.22	1.31	1.23	0.16	0.16	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.17	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	DECONRS	A	15	-	2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FLDRFSL	A	235	-	1	8	12	15	15	12	12	12	12	12	12	12	12	12	12	12	12	20	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	A	3	-	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	FPFILSL	C	252	-	36	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NCTRASH	A	101	-	1	5	5	7	7	5	5	5	5	5	5	5	5	5	5	5	5	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	NFRCOMP	C	77,136	-	11,019	66,116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	PROCFIL	C	63,271	-	432	2,590	3,623	4,752	4,817	3,795	3,795	3,795	3,795	3,795	3,795	3,795	3,795	3,690	3,690	3,690	3,690	968	968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWCUPRS	B	8	-	1	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	A	769	-	5	32	35	45	46	36	36	36	36	36	36	36	36	35	35	35	35	88	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	RWDMRES	B	81,344	-	528	3,166	4,428	5,808	5,887	4,639	4,639	4,639	4,639	4,639	4,639	4,639	4,639	4,510	4,510	4,510	4,510	3,189	3,189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	SSYSRES	A	1,535	-	11	68	90	119	120	95	95	95	95	95	95	95	95	92	92	92	92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utility	D&D	A	29,954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,321	2,321	2,321	2,321	2,321	2,195	2,195	2,195	2,195	2,195	1,475	1,475	1,475	1,475	1,475
Utility	D&D	B	213,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,580	4,580	4,580	4,580	4,580	9,549	9,549	9,549	9,549	9,549	28,548	28,548	28,548	28,548	28,548
Utility	D&D	C	1,928,400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68,880	68,880	68,880	68,880	68,880	206,640	206,640	206,640	206,640	206,640	110,160	110,160	110,160	110,160	110,160
TOTAL			2,441,324	-	13,548	74,932	9,465	12,018	12,164	9,854	9,854	9,854	9,854	9,854	9,854	9,854	9,854	9,617	9,617	9,617	9,617	5,542	5,542	77,052	77,052	77,052	77,052	77,052	219,656	219,656	219,656	219,656	219,656	141,455	141,455	141,455	141,455	141,455
UTILITY ONLY TOTAL				-	12,277	73,660	8,194	10,747	10,892	8,582	8,582	8,582	8,582	8,582	8,582	8,582	8,582	8,345	8,345	8,345	8,345	4,270	4,270	75,781	75,781	75,781	75,781	75,781	218,384	218,384	218,384	218,384	218,384	140,183	140,183	140,183	140,183	140,183