



Texas Radiation Advisory Board

Michael Ford, C.H.P.
Chair

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February 21, 2007

Mr. Albert Hawkins
Executive Commissioner
Texas Health and Human Services Commission
P.O. Box 13247
Austin, TX 78711-3247

Dear Commissioner Hawkins:

For over a year, the Texas Radiation Advisory Board has been engaged in continuing discussions with the staffs of the Texas Commission on Environmental Quality and the Department of State Health Services regarding how the State might allow waste products containing very low levels of radioactive material to be processed at an appropriately licensed facility and then disposed at a landfill regulated for the disposal of hazardous waste.

Though this waste has been approved for alternate disposal by the US Nuclear Regulatory Commission (i.e., disposal as non-radioactive waste in hazardous waste landfills), it still falls within the regulatory jurisdiction of the State. Further, the RCRA hazardous waste landfills being considered for this waste, though constructed to rigorous standards, are not specifically regulated for the disposal of low-level radioactive waste.

At the October 14, 2006 meeting of the Board, DSHS and TCEQ staffs reported that they were unable to reach a consensus on how such a procedure might be implemented. As explained to the Board, all radioactive material is subject to the jurisdiction of the DSHS and the TCEQ unless it is exempted under the Texas Radiation Control Act. Exemption of the waste by the US Nuclear Regulatory Commission is reportedly ineffective to avoid subsequent regulation in Texas.

After months of discussion with the agency staffs, I directed the TRAB Waste and Industrial Committee to evaluate and to make recommendations regarding this matter. At the January 6, 2007 meeting, the Committee reported back with a proposed rule that the Board feels addresses all the concerns of the staff. That proposed rule is attached.

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The Board believes that this disposal option, which allows *very low levels* of licensed radioactive material to be disposed in RCRA-permitted hazardous waste landfills, will provide a safe alternative that is fully protective of the public health and safety. Hazardous waste landfills are built to exacting standards that rival, and in some cases exceed, those used for the design and construction of low-level radioactive waste facilities.

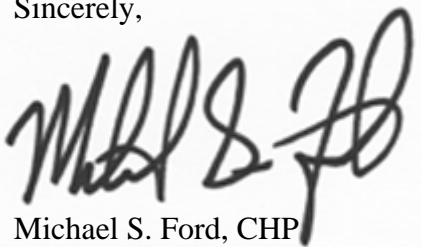
This disposal option is intended to provide for the disposal of *only very small* amounts of radioactive material, approaching levels that are “below regulatory concern.” The Board’s proposal requires the waste to be carefully evaluated and independently verified at a radioactive waste processing facility prior to being sent to a hazardous waste landfill, and also requires radiation safety plans, environmental monitoring and recordkeeping. These are all issues identified by the staff as necessary prerequisites for an adequate rule.

This option, if implemented, will not preclude the immediate need for a low-level radioactive waste disposal site in Texas.

I ask that this proposed rule be evaluated by your agency. If the proposal addresses their concerns, either in whole or in part, I ask that a rulemaking commence to implement the proposal as outlined in the attached draft rule. If the proposal does not address your agency’s concerns, I respectfully request a written explanation be submitted to the Board explaining on what grounds this proposed solution fails.

Thank you for your consideration of the Board’s recommendation and your prompt action on this request.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael S. Ford". The signature is stylized and cursive.

Michael S. Ford, CHP
Chair

Attachment

CC: Kathleen White, Chair, Texas Commission on Environmental Quality
Larry Soward, Commissioner, Texas Commission on Environmental Quality
David Lakey, M.D., Commissioner, Texas Department of State Health Services
Kathy Perkins, Assistant Commissioner, Regulatory Services, DSHS
TRAB Members

Attachment
TRAB Proposed Rule Change

Amend 25 TAC 289.202(ff) to add a section (4) as follows:

(4) Radioactive material not exceeding the concentrations in Table A may be transferred for disposal to a hazardous waste disposal facility authorized by the Texas Commission on Environmental Quality (Commission) or its successor, another state's regulatory agency with jurisdiction to regulate hazardous waste as classified under Subtitle C of the Resource Conservation and Recovery Act (RCRA), or the EPA, as provided by sections (A) through (F) below.

(A) The material may be transferred for disposal if the following conditions are met.

(1) Radioactive material, whether packaged or unpackaged (i.e., bulk), must be treated and stabilized to comply with all RCRA waste treatment requirements of the appropriate state or federal regulatory agency as listed in this paragraph. The treatment operations must be undertaken by a licensee authorized under §289.254 of these rules to operate a radioactive waste processing facility;

(2) The radioactive material is transferred in accordance with radiation safety, operating and emergency procedures approved by the agency;

(3) The radioactivity contained in the materials to be transferred to the hazardous waste disposal facility does not exceed the concentration limits specified in Table A of this section;

(4) The hazardous waste disposal facility operator has been notified in writing of the impending transfer of treated materials and has certified that the hazardous waste disposal facility is authorized by the appropriate agency to receive radioactive materials, that the permittee has implemented a radiation safety program and conducts environmental monitoring for radioactive material, and has agreed in writing to receive and dispose of the packaged or unpackaged materials. Copies of the notification and agreement shall be submitted to the Commission and the agency annually.

(5) The operator's radiation safety program provides that:

(i) No further treatment of the material received shall occur at the hazardous waste facility, and

(ii) Non-occupationally exposed workers at the hazardous waste facility will not receive an annual dose exceeding 100 mrem (1 mSv);

(6) The licensee notifies the agency and commission, in writing, of the impending transfer, at least 90 days before the transfer.

(7) The dose rate at 1 meter (3.28 feet) from the surface of any package containing stabilized waste shall not exceed 2 millirems per hour or 20 microSv per hour, above background.

(8) Packaged or unpackaged stabilized material shall contain post-treatment average concentrations of radioactive material that do not exceed the concentration limits given in Table A to this section.

(9) Shipments consolidated after treatment at the waste processing facility licensed under 25 TAC 289.254 into another container for transfer to the hazardous waste facility need not be manifested if the shipments (a) are to be transferred to an adjacent or proximate hazardous waste disposal facility and (b) are not transported on the public roads or highways of Texas;

(B) Nothing in this subsection shall be or is intended to be construed as a waiver of any RCRA permit condition or term, of any state or local statute or regulation, or of any federal RCRA regulation;

(C) The total of the licensed radioactive material received by the hazardous waste disposal facility over its operating life must be sufficiently limited such that the TEDE to any member of the public does not exceed 1.0 mrem (0.01 mSv) per year, including that from groundwater sources of drinking water

(D) The licensee must maintain a record of the total radioactive material transferred by the licensee to any hazardous waste disposal facility.

(E) At least annually, the agency, upon consultation with the Commission, will verify, or will cause the licensee to verify, that the TEDE does not exceed the limit specified in section (C) above.

(F) The agency may prohibit further transfers of radioactive material to the RCRA facility based on the annual dose assessment.

Table A
Summary of Concentration and Activity Limits

Radionuclide	Allowable Concentration (pCi/gm)	Total Activity per year (Ci/yr)	Total activity limit per site (Ci/site)
Ac-227+D	26	0.182	
Ag-108+D	268	0.248	
Ag-110m+D	153	0.251	
Al-26	153	0.251	
Am-241	6	0.187	
Am243+D	27	0.192	
Au-195	2700	0.277	
Bi-207	270	0.248	
C-14	800		0.66
Ca-41	2700000	0.186	
Ca-45	270000	0.189	
Cd-109	245098	0.250	
Ce-141	2700	0.257	
Ce-144+D	2700	0.259	
Cf-252	270	0.181	
Cl-36	270000		0.036
Cm-242	2700	0.190	
Cm-243	27	0.191	
Cm-244	270	0.185	
Cm-248	27	0.184	

Radionuclide	Allowable Concentration (pCi/gm)	Total Activity per year (Ci/yr)	Total activity limit per site (Ci/site)
Co-57	2700	0.257	
Co-60	169	0.241	
Cs-134	270	0.247	
Cs-135	270000	0.202	
Cs-137+D	40	0.252	
Eu-152	80	0.243	
Eu-154	20	0.250	
Eu-155	200	0.273	
Fe-55	2000	0.233	
Fe-59	270	0.250	
Gd-152	730	0.186	
Gd-153	24631	0.289	
Ge-68+D	270	0.249	
H-3	3000		386000.000
I-125	200	0.188	
I-129	200		0.005
Ir-192	40	0.248	
K-40	2670		0.240
Mn-54	270	0.247	
Na-22	190	0.248	
Nb-94	270	0.247	
Nb-95	270	0.248	
Ni-59	270000	0.190	
Ni-63	700	0.181	
Np-237+D	27	0.194	
Pa-231	27	0.186	
Pb-210+D(U8)	270	0.182	
Pm-147	200	0.190	
Po-210(U8)	270	0.189	
Pu-238	6	0.189	
Pu-239	6	0.184	
Pu-240	6	0.184	
Pu-241+D	2700	0.190	
Pu-242	27	0.185	
Pu-244+D	27	0.021	
Ra-226+D(U8)	147	0.235	
Ra-228+D	270	0.247	
Ru-106+D	1984	0.257	
S-35	2700000	0.189	
Sb-124	230	0.242	
Sb-125+D	1047	0.244	
Sc-46	211	0.241	
Se-75	1258	0.243	
Sm-147	270	0.184	
Sm-151	270000	0.186	

Radionuclide	Allowable Concentration (pCi/gm)	Total Activity per year (Ci/yr)	Total activity limit per site (Ci/site)
Sn-113+D	1739	0.251	
Sr-85	840	0.251	
Sr-89	27000	0.242	
Sr-90+D	40	0.187	
Ta-182	270	0.249	
Tc-99	200		0.291
Te-125m	27000	0.262	
Th-228+D	27	0.214	
Th-232+D (including Ra-228+D +Th-228+D)	8	0.203	
Th229+D(U3)	27	0.187	
Th-230(U8)	6	0.189	
Tl-204	60	0.281	
U-232(Pa)	270	0.189	
U-233	270	0.186	
U-234(U8)	6	0.189	
U-235+D	270	0.202	
U-236	270	0.134	
U-238+D	9	0.190	
Zn-65	270	0.244	
Zr-95+D	270	0.243	
U-nat	30	0.100	

For other radionuclides not included in Table A, the maximum allowable concentrations will be the sewer effluent concentrations in Table III of 25 TAC 289.202(ggg)(2)(F), with the units changed from microcuries per milliliter to microcuries per gram. The annual activity limit for these radionuclides is 0.1 Ci/yr.