From: "Wrobel Mark Lt Col AFMSA/SGPR" <Mark.Wrobel@pentagon.af.mil>
To: <NRCREP@nrc.gov>
Date: Tue, Sep 5, 2006 5:35 PM
Subject: Request for Comments on the Nuclear Regulatory Commission's Low Level Radioactive Waste Program

Mr Whited,

Please find attached a compilation of US Air Force comments the NRC LLRW Program, as requested in the Federal Register, dated 7 Jul 2006. Thank you for the opportunity to comment, and we hope they are useful in your deliberations. Please contact me if you have any questions.

V/R Lt Col Mark C. Wrobel
MARK C. WROBEL, Lt Col, USAF, BSC
Chief, Radiation Protection Division
USAF Radioisotope Committee
Air Force Medical Operations Agency
Office of the Surgeon General
DSN 297-4308, 202-767-4308

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71FR 38675
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<<USAF Comments - LLRW Program - 5Sep06t.pdf>>

CC: "Rachel Browder (E-mail)" <rsb3@nrc.gov>

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Add = J. Kennedy (JEK1)
R. Whited (ARW2)

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

SEP - 5 2006

MEMORANDUM FOR U.S. NUCLEAR REGULATORY COMMISSION
ATTN: Chief, Rules and Directives Branch

FROM: AFMOA/SGPR
110 Luke Ave, Rm 400
Bolling AFB, DC 20032-7050

SUBJECT: Request for Comment on Low Level Radioactive Waste Program (Federal Register, 27 July 2006)

Thank you for the opportunity to comment on Nuclear Regulatory Commission's (NRC's) Low Level Radioactive Waste (LLRW) Program, as requested in the Federal Register (71 FR 38675, 7 Jul 06). Please find attached a compilation of comments provided by various U.S. Air Force organizations that are impacted by or support management of low-level radioactive waste. Please contact me at 202-767-4308, or mark.wrobel@pentagon.af.mil if you have any questions.

MARK C. WROBEL, Lt Col, USAF, BSC
Chief, Radiation Protection Division and
USAF Radioisotope Committee Secretariat
Air Force Medical Operations Agency
Office of the Surgeon General

Attachment:
Integrated Comments on LLRW

cc:
NRC Region IV (Ms Rachel Browder)

Responses to Request for Comments on the Nuclear Regulatory Commission's Low Level Radioactive Waste Program

Regarding the Current LLW Disposal Regulatory System

1. What are your key safety and cost drivers and/or concerns relative to LLW disposal?

Lack of disposal sites is driving up prices. There should be a universal approach and more regulatory oversight on development of disposal sites for disposal of all types (classes) of LLRW.

2. What vulnerabilities or impediments, if any, are there in the current regulatory approach toward LLW disposal in the U.S., in terms of their effects on:

a. Regulatory system reliability, predictability, and adaptability;
One vulnerability is the distance material will have to travel for disposal without local disposal facilities. This re-emphasizes the need for a regional approach to disposal facilities as envisioned in the 1985 Policy Act. A related vulnerability is that the LLRW policy act does not require adjacent states to be a party to a compact. This results (or will result) in significant (and largely unnecessary) trans-compact shipping.

Impediments include State regulations that are prohibiting development of disposal sites, and substantially different Compact rules that increase the complexity of shipping and disposition of LLRW.

b. Regulatory burden (including cost); and
There is considerable regulatory variability between compacts and licensed radioactive waste disposal sites that makes compliance overly complex. Developing federal guidance, or through the CRCPD, standardized guidance on management of LLRW could substantially alleviate this complex field and improve regulatory compliance and safe disposal practices.

The decommissioning or remediation of sites that have diffuse yet relatively low-levels of contamination poses a tremendous societal economic cost that is often disproportionate to the radiological health risk averted through the D&D action. Current D&D modeling is often grossly conservative, and tools for risk / benefit analysis of site remediation options are lacking. For example, the risk posed to workers during a remediation project from physical injury or trauma, or the ecological impact of a remediation, is generally not considered adequately in deriving clean-up criteria for a site.

Development of broadly applicable de minimus or tiered standards for a range of materials, soils, and land usage or exposure scenarios would expedite D&D efforts and greatly reduce costs associated with handling/packaging and disposal of LLR wastes, particularly very low activity wastes. For example, could there be a level of contamination where use of municipal waste sites is permissible?

Further, developing models that address more than just potential exposure to a maximally exposed individual, and include other risks (ecological/individual health) posed by the remedial action itself may help to raise to more reasonable levels site specific DCGLs.

c. Safety, security, and protection of the environment?

Most waste streams produced by the Air Force are not at a level that would pose safety/security or environmental issues.

Potential Alternative Futures

3. Assuming the existing legislative and regulatory framework remains unchanged, what would you expect the future to look like with regard to the types and volumes of LLW streams and the availability of disposal options for Class A, B, C, and greater-than-class-C (GTCC) LLW five years from now? Twenty years from now? What would more optimistic and pessimistic disposal scenarios look like compared to your "expected future"?

5 years: More costs from brokering, packaging, transport and disposal. No additional disposal options beyond existing sites, with the potential loss of Barnwell as a disposal option.

20-years: Fewer disposal sites available. Lack of state compliance with LLRW Policy act forces most permittees to 1) use advanced volume reduction/recycling techniques, 2) develop on-site long-term storage facilities, 3) replace radioactive with non-radioactive means to accomplish tasks or generally abandon use of radioactive material and 4) rely on Federal, tribal or foreign disposal sites to cost-effectively dispose of wastes.

Worst case: more waste in long-term storage, treatment, and consolidation. A potential decrease in U.S. quality-of-life precipitated by abandoning medical, industrial, and research uses of radioactive materials, to include use of nuclear power.

Best-case: states and compacts (via the CRCPD?) accelerate compliance with the LLRW policy act. They establish and build an array of regional disposal facilities to safely take LLRW of various types and classes.

4. How might potential future disposal scenarios affect LLW storage and disposal in the U.S., in terms of:

a. Regulatory system reliability, predictability, and adaptability;

If there were more reliable, predictable, and acceptable regulations/standards it would open the door to cost-effective disposal. Set a firm federal standard and

companies will know how to build maintain and license disposal facilities. Currently, they have to re-create the template in every state/compact.

b. Regulatory burden (including cost); and

Costs will not be artificially high if there are sufficient disposal options, and economic competition between disposal sites.

c. Safety, security and protection of the environment?

Strict regulations and oversight will address safety, security & environmental concerns.

Can the Future Be Altered?

5. What actions could be taken by NRC and other federal and state authorities, as well as by private industry and national scientific and technical organizations, to optimize management of LLW and improve the future outlook? Which of the following investments are most likely to yield benefits:

a. Changes in regulations;
b. Changes in regulatory guidance;
c. Changes in industry practices;
d. Other (name).

a: Consider implementing regulations that facilitate the original intent of the LLRW policy act. Take lessons learned from the past 20 years to develop implementing guidance.

b: Consider developing recommended industry practices, standardized guidance, or even regulatory requirements to give additional options for radioactive material characterization and disposal. For example, expanded use of RESRAD to support on-site management options or characterizations of waste for alternatives to disposal in licensed burial sites. Consider expanded use of RESRAD and appropriate regulatory changes to support disposal of very low activity waste streams in municipal landfills. Similarly, on-site management options can include tilling or dilution of waste streams to levels below DCGLs.

c: Support development of recycling and volume reductions strategies and technologies. The US Air Force recycling operations at Wright Patterson AFB are a model program that can be used by other industries/states and compacts. Presently, disposal of a single Chemical Agent Monitor (containing15 mCi Ni-63) costs ~$1,000. Recycling and volume reduction strategies can effective negate these costs or greatly minimize them. Specific techniques and technologies to extract radiological constituents from large masses of otherwise unaffected materials should also be investigated. These could greatly reduce radioactive waste volumes, and subsequent disposal costs. Consider grant funding to universities to research these alternatives.

6. Are there actions (regulatory and/or industry initiated) that can/should be taken in regard to specific issues such as:

a. Storage, disposal, tracking and security of GTCC waste (particularly sealed sources);

Public education will go along way in calming fears of disposal sites especially for GTCC waste but all disposal facilities need more community acceptance.

b. Availability and cost of disposal of Class B and C LLW;

Consider using Federal or tribal lands (with Native American agreement) to develop Class B & C sites. At a minimum the NRC could suggest this as a possibility if existing Class B & C sites continue to restrict generators to their facility. In the long term, emphasize Compact development of disposal facilities.

c. Disposal options for depleted uranium;

Look into reuse/recycling or new standards for disposal for depleted uranium. Relying on one disposal option is not effective planning. Ten years ago, Barnwell was a perfect disposal facility now it is closing to most of the country.

Develop appropriate models for DU clean-up efforts that use as perspective a conservative measure of naturally occurring uranium in soils and materials.

d. Extended storage of LLW;

Without a plan for proper disposal, long-term storage simply delays appropriate management of wastes, creating local liability/security issues, and increasing overall costs and complexity of management. A specific is a case where bankruptcy is declared and a company no longer able to pay for or self-manage long-term storage. An option would be a Federally subsidized long-term interim storage facility that is paid for by NRC permits/licenses for wastes that need to be managed.

e. Disposal options for low-activity waste (LAW)/very low level waste (VLLW);

As discussed under 2.b., consider developing improved models and de-minimus criteria that would permit alternative methods to manage these wastes (e.g. municipal waste management, or leaving in-place).

Opening alternate disposal facilities has lowered costs but these facilities can also be prohibited from accepting LLRW. There is a need to codify the acceptance criteria at all sorts of disposal sites in regards to risk-based acceptance of LLRW.

f. On-site disposal of LLW;

On-site storage produces an interim solution that in the long-term simply increases the costs and complexity of final disposition for LLRWs. On-site disposal for de-minimus wastes would be acceptable, but for all other wastes, would create long-term site liability that would at some point require a secondary remediation of the site. This has been the case for shallow-land burial LLRW sites established in the 1950s and 60s by Federal agencies.

g. Other (name).

No comment.

7. What unintended consequences might result from the postulated changes identified in response to questions 5 and 6?

Failure to provide a safe, reliable and cost-effective means of LLRW management could have far-reaching impacts on the nuclear power industry, medical uses of radioisotopes, and uses of radioactive materials in research, academics and industry. Inability to get rid of these wastes will cause a decline in the use of these materials, to a point that could have broad national impacts.

Interagency Communication and Cooperation

8. Based on your observations of what works well and not-so-well, domestically and/or internationally, with regard to the management of radioactive and/or hazardous waste, what actions can the NRC and other Federal regulatory agencies take to improve their communication with affected and interested stakeholders?

NRC and EPA should continue to work together to address areas of overlapping regulatory authority. These include the management of mixed waste and decommissioning of RCRA sites containing radioactive material. Their MOU on site decommissioning should be examined in light of the expanded definition of by-product material from the AEAct of 2005, and revisions made as necessary.

Along the line of developing de-minimus criteria, EPA and NRC should consider developing a formal definition of mixed waste containing LLRW. Establishing de-minimus levels of radionuclides in mixed waste streams would facilitate management and disposal options. As an example, effectively background levels of Cs- 137 along with other chemicals at the formal McClellan AFB CA are being characterized as Mixed Waste, which subsequently now requires burial outside the State of CA at substantial greater cost and complexity than in-state disposal for purely chemically hazardous wastes.

EPA/NRC should develop a formal enforcement policy for implementation of the LLRW Policy Act, and provide Federal mediation to support establishment of required LLRW disposal sites.

9. What specific actions can NRC take to improve coordination with other Federal agencies so as to obtain a more consistent treatment of radioactive wastes that possess similar or equivalent levels of biological hazard?

Set viable risked based environmental standards for cleanup and/or rules for leaving in place. Every EPA feasibility study starts with leaving it in place. This option may be the safest way to mitigate actual risk to the population in some cases. Rocky Flats is a good example of this, manage the risk/exposure.