

REVISED

June 17, 2011

MEMORANDUM TO: R. W. Borchardt
Executive Director for Operations

FROM: Andrew L. Bates, Acting Secretary **/RA/**

SUBJECT: STAFF REQUIREMENTS – SECY-11-0058 – PROPOSED FINAL
POLICY STATEMENT ON THE PROTECTION OF CESIUM-137
CHLORIDE SOURCES

The Commission has approved the staff's proposal to publish in the *Federal Register* the final policy statement on the protection of cesium chloride (CsCl) sources, subject to the changes noted below. The Commission has approved staff's recommendation to not develop dispersibility or solubility criteria for these sources at this time.

The staff should maintain awareness of advances in research related to alternative forms of CsCl in the U.S. and overseas and be prepared to continue the development of criteria should events justify.

The staff should continue to evaluate whether or not enhancements made to the physical protection of CsCl sources on a voluntary basis should become part of the security requirements for newly installed irradiators.

Changes to the Policy Statement

1. On page 2, 1st full paragraph, revise lines 6 and 7 to read '... the NRC **has required additional security measures for category 1 and 2 sources and** considers it prudent to express its views on the safe and secure use of CsCl ~~these~~ sources.' Revise line 7 to read '... many applications **that have significant societal benefits**, most ...'
2. On page 2, 2nd full paragraph, revise the last line to read '... recommended ~~the replacement or elimination of~~ **eliminating Category 1 and 2 CsCl sources from use in the United States and to the extent possible elsewhere.** The National Research Council also recommended that replacement of some sources with alternatives should be **implemented with caution, ensuring that essential functions that the sources perform are preserved.**'
3. The SECY paper inappropriately describes the role of the agency with respect to developing a disposal facility for greater-than-Class-C (GTCC) waste. Page 3 of the SECY states that, "The proposed Final Policy Statement recognizes DOE's issuance of the EIS and expresses the Commission's intent to interact with DOE to resolve the issue of waste disposal." It is not the agency's role to "resolve the issue of waste disposal." It is our role to regulate such a facility, and DOE's Draft EIS correctly states that, "...GTCC

LLRW...is to be disposed of in a facility that is licensed by the NRC and that the NRC has determined is adequate for protecting public health and safety.” This language, and other similar language regarding “actively interacting with DOE in all phases of the process to establish a storage facility,” should be revised in the Federal Register Notice (FRN).

4. On page 4, revise line 1 from the top read ‘ ... use of CsCl sources ~~and of new developments in terms of security of CsCl, in~~’
5. On page 4, 2nd full paragraph, revise lines 4 and 5 to read ‘ The **Draft** Environmental’
Revise lines 6 through 8 to read ‘ ... of the **Draft** EIS and expresses the Commission’s intent to ~~interact with~~ **monitor** DOE **as it makes a decision on a GTCC disposal facility which will require an NRC license** ~~to resolve the issue of waste disposal.~~
6. On page 6, the first sentence of the first full paragraph should be revised to read, “Effective regulatory requirements and strong **security** measures are currently in place....”
7. On page 6, 2nd bullet, revise line 3 to read ‘ ... whether or **not** alternative’
8. On page 7, 2nd full paragraph, revise line 7 to read ‘ ... Verification System **which will permit verification of a license to possess radioactive sources,** are key’
9. On page 8, revise line 1 from the top to read ‘ ... irradiators with **additional** physical’
Revise line 4 from the top to read ‘ ... complemented by **NNSA’s** expert’
10. The statement on page 8 should be clarified to indicate that it is NNSA that is providing assist visits and table-top exercises to the licensees, not the NRC.
11. On page 8, 2nd full paragraph, revise lines 1 and 2 to read ‘ ... (EPA) **established the Task Force on Radiation Source Protection and Security to be chaired by the Chairperson of the Commission (or designee). The purpose of the Task Force is directed the NRC to establish and lead the Task Force to evaluate**’
Revise line 5 to read ‘ ... agencies (11 of which were specified in the EPA), the’
Revise the last line to read ‘ ... and **potential licensing for discontinuation of use of CsCl sources, contingent upon the viability of alternative technologies and consideration of the threat environment.**’
12. On page 9, last paragraph, revise line 1 to read ‘ ... and 2 ~~quantity~~ sources’
Revise the last line to read ‘ ... concerns if **not properly secured and** used in’
13. On page 10, last paragraph, revise lines 10 through the end of the paragraph on page 11 to read “Based on decades of use, including trial use of certain x-ray machines for irradiation, the biomedical research community considers the Cs-137 irradiators optimal for providing effective, reliable, dependable, economical, and experimentally reproducible means of required health care equipment needed for research. ~~Alternative technologies (e.g., cobalt-60 irradiators, linear accelerators, x-ray irradiators) are not as stable, more expensive, require more maintenance, are less suitable for accommodating research specimen, and require physical locations more robust than current irradiators.~~
In addition, ~~a~~ According to the medical community, the results of previous research with Cs-137 irradiators cannot be compared to results obtained from other types of irradiation

due to differences in the energy spectra and dose distribution of the radiation sources. Conversion factors between biomedical experimental results of x-ray versus gamma-rays do not exist. The use of alternative technologies would necessitate extensive research to re-validate research models of diseases that have already been established using irradiation devices containing Cs-137. ~~Numerous research studies would be needed to ensure that alternative technologies would not compromise or adversely impact ongoing studies related to human health and health care.~~

14. On page 11, 1st full paragraph, revise line 7 to read ‘ ... by the **national U.S.** and’
15. On page 11, last paragraph, revise line 6 to read ‘ ... requirements until ~~commercial~~ options’
16. On page 12, revise lines 3 through 5 from the top to read ‘ ... issues. ~~To resolve these issues, the~~ **The** NRC will continue to **monitor** ~~participate with its~~ Federal and State **activities** ~~partners~~ and representatives of the private sector in initiatives to **as they** explore’
17. The language on page 12 should be revised so that it does not state that the agency is “continu[ing] to participate with...representatives of the private sector in initiatives ...to address the need for disposal and disposition of CsCl sources.”
18. On page 12, 1st full paragraph, replace the last sentence with the following: The Commission will monitor DOE as it makes a decision on a GTCC disposal facility, which will require an NRC license.
19. On page 12, last paragraph, revise the last line to read ‘ ... of ~~risk-significant~~ **IAEA Category 1 or 2** sources’
20. On page 13, last paragraph, revise line 1 to read ‘ ... requirements **and measures** are adequate ~~and provide sufficient safeguards,~~’
21. On page 14, 1st full paragraph, revise line 12 to read ‘ ... improvements to **further** minimize’
22. On page 14, last paragraph, revise line 3 to read ‘ ... NRC **and the Agreement States have** ~~has~~ the responsibility’ Revise line 6 to read ‘ ... requirements. **The actions of the NRC and the Agreement States to date have resulted in a strong security program.** The NRC’
23. On page 15, revise line 5 from the top to read ‘ ... these developments ~~closely~~. Regarding’ Revise lines 6 and 7 from the top to read ‘ ... the use of **IAEA Category 1 and 2 CsCl** ~~Cs-137 irradiators in the three specific areas of application that benefit society,~~ the NRC will **would** solicit public ... CsCl devices **if additional security measures are considered.**’ Revise line 10 from the top to read ‘ ... partnership with ~~the~~ its Agreement States, **]** will be’

cc: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
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