August 20, 2003

NOTE TO: Janice-Dunn Lee, OIP

THRU: Carl Paperiello, DEDO/DEDMRS

FROM: Ashok Thadani, RES **/ RA Jack Strosnider Acting For/**

SUBJECT: STAFF COMMENTS ON IAEA DRAFT SAFETY GUIDE 161, "RADIOACTIVITY IN MATERIAL NOT REQUIRING REGULATION FOR PURPOSES OF RADIATION PROTECTION"

As requested, the staff has reviewed the draft safety guide and is providing the attached comments for forwarding to the Department of State. The staff worked with other Federal agencies under the umbrella of the Interagency Steering Committee on Radiation Standards Recycle Sub-committee and believes that these comments reflect the views of the other agencies. An electronic version was sent to them to confirm this after some revisions to the final document were made.

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E-3

OFFICE OF NUCLEAR REGULATORY RESEARCH
DIVISION OF SYSTEMS ANALYSIS & REGULATORY EFFECTIVENESS
RADIATION PROTECTION, ENVIRONMENTAL RISK & WASTE MANAGEMENT BRANCH

BRANCH: RPERWMB TYPIST NAME: FLETCHER PHONE: 415-6238

ITEM NO.: **RES#: 2003110**
EDO#: G20030222

ORIGINATOR: MECK, DSARE/RPERWMB

SUBJECT: DRAFT SAFETY GUIDE, "RADIOACTIVITY IN MATERIAL NOT REQUIRING REGULATION FOR PURPOSES OF RADIATION PROTECTION

DATE: 07/31/03

ROUTING:

1.	MECK	CONCUR	05/	/03
2.	TROTTIER	CONCUR	05/	/03
3.	ELTAWILA	CONCUR	05/	/03
4.	STROSNIDER	REVIEW	05/	/03
5.	THADANI	CONCUR	05/	/03
6.	PAPERIELLO	SIGN/CONCUR	05/	/03
7.	FLETCHER	DISPATCH	05/	/03

Title: RADIOACTIVITY IN MATERIAL NOT REQUIRING REGULATION FOR PURPOSES OF RADIATION PROTECTION

Comments by Reviewer Reviewer: Page 1 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
1	General	This draft DS161 would conflict with the BSS Schedule I from dose criteria for exemption of naturally occurring radionuclides to a benchmark concentration, regardless of dose. The exemptions have been derived from exempt quantities (smaller amounts), but the activity concentration levels would also apply to large bulk quantities. DS161 addresses exclusion for these radionuclides. Clarification is needed. As drafted DS161 could be read to imply regulatory inflexibility for excluding exposures (i.e., deemed unamenable to regulatory control) arising from naturally occurring	Usefulness; Scope; Completeness; Quality Clarity				

Comments by Reviewer Reviewer: Page 2 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
		radionuclides. Such an interpretation would lead to exclusion of naturally occurring radionuclides from regulation on the basis of a single concentration. In some cases, implementation may cause regulation above and below this level. There may be a net benefit (justification) to regulate them at different levels. Flexibility needs to be emphasized.					
2	General	The adoption of clearance levels would establish a lower bound to "amenable to control" without the implication of removing the potential for higher levels being excluded. See attached logic diagram. As such, clearance levels could be established on a uniform "trivial dose" basis for all radionuclides.	Usefulness; Scope; Completeness; Quality Clarity				

Comments by Reviewer Reviewer: Page 3 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
3	General	As agreed in the past by RASSC/WASSC, IAEA should engage WHO, WTO, FAO, etc. regarding foodstuffs and water.	Usefulness; Scope; Completeness; Quality Clarity				
4	General	As discussed at RASSC/WASSC, the averaging and sampling guidance should be included in a separate Safety Report. This is currently identified in the agency Blue Book.	Usefulness; Scope; Completeness; Quality Clarity				
5	General	There is ambiguity in the treatment of naturally occurring nuclides with low atomic numbers, because they are listed also as artificial nuclides, e.g., H-3, C-14, S-35, Na-22, etc.	Usefulness; Scope; Completeness; Quality Clarity				

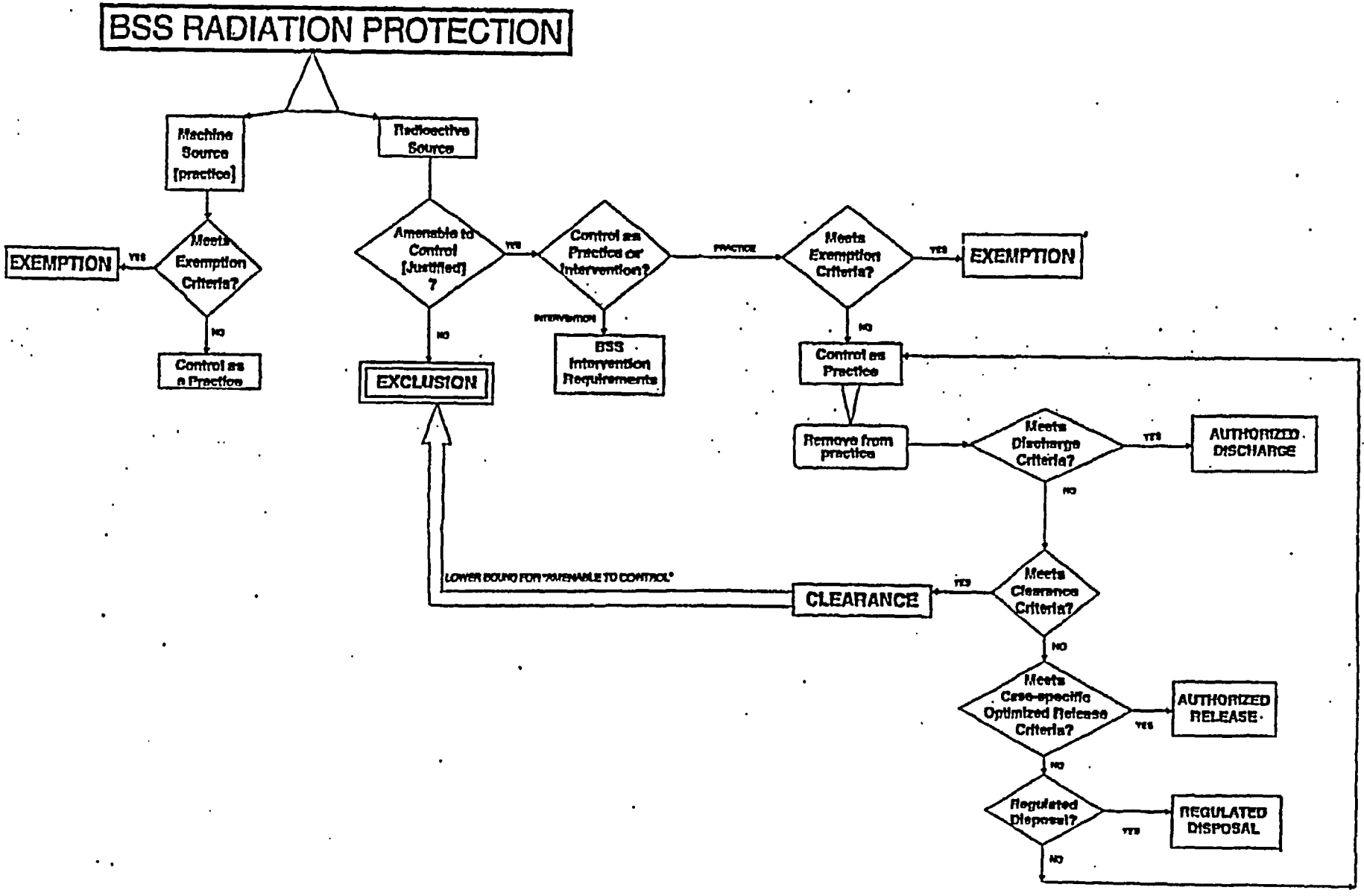
Comments by Reviewer Reviewer: Page 4 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
6	General	The terms large quantities, moderate quantities and bulk quantities should be expanded for clarification of the methodology. Vast quantities of natural materials and ores of critical importance to the U.S. economy exceed the DG161 "activity concentration levels" for natural uranium and/or natural thorium. They could become "radioactive" materials by implementing DS161. Specifically, these materials include: phosphate ore and fertilizer; zirconium ores; titanium minerals; tungsten ores and concentrates; vanadium ores; yttrium and rare earths; bauxite and alumina; coal and coal fly ash; water treatment residuals; recycled pipes with scale; and granite.	Usefulness; Scope; Completeness; Quality Clarity				

Comments by Reviewer Reviewer: Page 5 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
7	General	Within the scope, DS161 should clarify that TS-R-1 should be referred to for exemption values for transportation activities. DS -161 concentration levels should be adjusted for compatibility with TS-R-1. DS161's lowering the regulatory threshold for natural materials would appear contrary to the exemption provided by TS-R-1. It would also appear to recapture vast quantities of natural materials and ores, in contrast to the exemption provisions of TS-R-1. Special attention is needed for packaging requirements for surface contaminated only (SCO) transport. This is to clarify that TS-R-1 is an international consensus standard and applies to transportation-specific dose modeling.	Usefulness; Scope; Completeness; Quality Clarity				

Comments by Reviewer Reviewer: Page 6 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
8	General	The Secretariat should re-initiate efforts to harmonize the activity concentration levels on a nuclide-by-nuclide basis with the levels available from other approaches, some of which are already implemented (e.g., EC RP-122, NUREG-1640).	Usefulness; Scope; Completeness; Quality Clarity				
9	General	A guidance document should not change any of the concepts, definitions, or exclusions of the BSS.	Scope, Clarity				

Comments by Reviewer Reviewer: Page 7 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
10	General	From Resolution GC(44)/RES/15, it is clear that the General Council intended to establish guidance for managing certain materials ("commodities") that are radiologically affected by catastrophic events -- like the Chernobyl accident or a RDD. DS161 appears broader in scope and to generally establish regulatory thresholds that are universally applicable to all commodities.	Usefulness; Scope; Completeness; Quality Clarity				
11	General	The alternative process for authorized release from a practice should be addressed. This process is based on optimization to allow authorized release at levels that comply with dose limitations but are not necessarily trivial. See attached logic diagram.	Usefulness; Scope; Completeness; Quality Clarity				

Comments by Reviewer Reviewer: Page 8 of 9 Date: August 12, 2003 Country/Organization: USA/NRC/DOE/EPA/DOL/STATES				Resolution			
Comment No.	Para/Line No.	Proposed New Text	Reason	Accepted	Accepted but modified as follows	Rejected	Reason for modification/ rejection
12	General	IAEA should consider providing two tables in DS161; one that lists the trivial (10 μSv/a) levels for all radionuclides, and a second set of tables for selected natural radionuclides that IAEA has judged are not amenable to control. The text of DS161 should indicate that the "not amenable-to-control levels" are to be used in place of trivial clearance levels if member states similarly determine that other materials are also not amenable to control, or that optimized levels should be used in place of trivial clearance values.	Usefulness; Scope; Completeness; Quality Clarity				


BSS RADIATION PROTECTION
Machine Source [practice]
Radioactive Source
Meets Exemption Criteria?
YES
EXEMPTION
NO
Control as a Practice
Amenable to Control [Justified] ?
YES
NO
EXCLUSION
Control as Practice or Intervention?
PRACTICE
INTERVENTION
BSS Intervention Requirements
Meets Exemption Criteria?
YES
EXEMPTION
NO
Control as Practice
Remove from practice
Meets Discharge Criteria?
YES
AUTHORIZED DISCHARGE
NO
Meets Clearance Criteria?
YES
CLEARANCE
LOWER BOUND FOR "AMENABLE TO CONTROL"
NO
Meets Case-specific Optimized Release Criteria?
YES
AUTHORIZED RELEASE
NO
Regulated Disposal?
YES
REGULATED DISPOSAL
NO