

RES

From: Catherine Mattsen
To: WND1.WNP9.LAB
Date: 11/18/96 10:38am
Subject: Response to Aubrey Godwin on questions concerning Ni-Th alloy

This is to inform you of DRA/RES concurrence on your memo responding to Aubrey Godwin's questions concerning the recycle of aircraft engine parts containing nickel-thoria alloy. The division concurs in the draft response as transmitted to us on November 14.

Aubrey V. Godwin, Director
Arizona Radiation Regulatory Agency
4814 South 40th Street
Phoenix, Arizona 85040

Dear Mr. Godwin:

I am responding to your e-mail questions on the handling of finished aircraft engine parts containing nickel-thoria alloy in accordance with the exemption in 10 CFR 40.13(c)(8) on unimportant quantities of source material.

A review of the original notice (32 FR 15872) published on November 18, 1967 and effective on December 18, 1967, indicates that there are no restrictions on the receipt, possession, use or transfer of this material (see Enclosure 1). This exemption remains in effect and includes the receipt of aircraft engines by the rework company, and transfer to the recycler for melting and/or other modifications. As noted, in the document referenced above, an analysis of the potential health hazards showed that it is highly unlikely that the small number of workers carrying out such operations will be exposed to radiation in excess of the limits recommended (at that time) by the International Commission on Radiological Protection for individuals in the general public when averaged over a period of 1 year.

Responses to your specific questions are provided in Enclosure 2.

Sincerely,

Paul H. Lohaus, Deputy Director
Office of State Programs

Enclosures:
As stated

Distribution:

DIR RF (6S-199)

RBangart

PLohaus

SDroggitis

LBolling

Arizona File

DCD (SP03)

PDR YES X NO

BMorris, RES

DCool, IMNS/NMSS

FCameron, OGC

DOCUMENT NAME: G:\LAB\THALLOY #2

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	OSP	OSP-DD	D:IMNS	OGC	RES	OSP:D
NAME	LBolling:kk	PHLohaus	DCool	FCameron	BMorris	RLBangart
DATE	11/8/96	11/12/96	11/ /96	11/ /96	11/ /96	11/ /96

OSP FILE CODE: SP-AG-2



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 17, 1996

NMSS

MEMORANDUM TO: Paul H. Lohaus, Deputy Director
Office of State Programs

FROM: Donald Cool, Director
Division of Industrial and
Medical Nuclear Safety, NMSS

SUBJECT: ARIZONA QUESTIONS ON THORIA-ALLOY

We concur in the October 4, 1996, draft response to Arizona provided the attached changes (strikeout/underlined areas) are incorporated. We recommended deletion of specific statements regarding conclusions on Part 40 exemptions at this time since both the preliminary and final assessments and outcome on Part 40 exemptions are currently being reviewed.

A copy of the attachment is also being provided electronically to Mr. Lloyd Bolling.

Attachment: As stated

Contact: Patricia A. Santiago, NMSS
(301) 415-7269

96 OCT 18 AM 11:41

DSP

4610220333 5pp.

Aubrey V. Godwin, Director
Arizona Radiation Regulatory Agency
4814 South 40th Street
Phoenix, Arizona 85040

Dear Mr. Godwin:

I am responding to your e-mail questions on the handling of finished aircraft engine parts containing nickel-thoria alloy in accordance with the exemption in 10 CFR 40.13(c)(8) on unimportant quantities of source material (Enclosure 1).

In response to your first 2 questions, a review of the original notice (32 FR 15872) published on November 18, 1967, and effective on December 18, 1967 (Enclosure 2), indicates that the Commission specifically stated:

"The exemption adopted permits the conduct of activities such as repair of finished aircraft engine parts containing nickel-thoria alloy, and the handling and processing of nickel-thoria scrap by scrap dealers and scrap processors. An analysis of the potential health hazards shows that it is highly unlikely that the small number of workers carrying out such operations involving nickel-thoria alloys will be exposed to radiation or airborne concentrations of radioactive material in excess of limits recommended by the International Commission of Radiological Protection for individuals in the general public when averaged over a period of 1 year."

This exemption remains in effect and includes the receipt of aircraft engines by the rework company, and transfer to the recycler for melting and/or other modifications. A review of other technical assistance requests related to nickel-thoria aircraft engine parts provide additional information which may be of interest to you. The U.S. Air Force, in a letter dated April 6, 1989, questioned disposal of nickel-thoria and indicated pursuant to 40.13(c)(8), nickel-thoria which cannot be reused as scrap should be exempted from further regulatory control. A December 23, 1993 memorandum to D. Chamberlain, NRC Region IV advised that, the Commission was silent, in both the proposed and the final rule, on the disposal of finished nickel-thoria aircraft engine parts authorized under 10 CFR 40.13(c)(8) to other than a scrap dealer, therefore, any other disposal is prohibited (Enclosure 3). The memorandum also explained that 10 CFR 40.13(c) allows the disposal of nickel-thoria alloy as scrap when the alloy meets the requirements of 10 CFR 40.13(c)(4).

~~In response to your third question, we are currently reviewing a draft report from ORNL on the radiological impacts to the public from Part 30 and Part 40 exemptions. Even considering the revision of 10 CFR Part 20, which now combines the internal and external doses to produce a TEDE, and the use of a public dose limit of 100 mrem/yr versus the old 500 mrem/yr, it is not expected that the conclusions regarding the 10 CFR 40.13(c)(8) exemption in the 1967 Federal Register Notice quoted above will change. Further, concern~~

Mr. Aubrey V. Godwin

-2-

the original Federal notice addressed similar concerns. ~~was (OGC recommends deletion of the following) raised in the early 1960s that steel supplies might become contaminated with source material. Extensive tests conducted by Dupont showed that essentially all of the thorium introduced into stainless steel or Inconel melting furnaces was separated with the slag. These~~ The issues associated with ~~types of issues (e.g., re-use of scrap metal will be addressed~~ in the planned recycle rulemaking effort which will be coordinated with the EPA.

In response to your fourth question, based on the information that you have provided, it appears that the nickel-thoria aircraft engine parts are being transferred to scrap dealers and recyclers as authorized by 10 CFR 40.13(c)(8). Therefore, we do not see the need for any enforcement action at this time.

Sincerely,

Paul H. Lohaus, Deputy Director
Office of State Programs

Enclosures:
As stated

DISTRIBUTION:
DIR RF (6S-199)
RBangart
PLohaus
SDroggitis
LBolling
FCameron, OGC
BMorris, RES
DCool, IMNS/NMSS
DCD (SP03)
PDR YES ☒ NO ☐

*See previous concurrence.

DOCUMENT NAME: G:\TSK6S199.lab

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure
"N" = No copy

OFFICE	OSP	E	OSP:DD	C	OGC	C	IMNS:D	C
NAME	LBolling:gd		PLohaus		FCameron		DCool	
DATE	10/02/96*		10/03/96*		/ /		/ /	
OFFICE	RES	C	OSP:D					
NAME	BMorris		RLBangart					
DATE	/ /		/ /		/ /		/ /	

OSP CODE: SP-AG-2

ROUTING AND TRANSMITTAL SLIP

DATE: OCTOBER 4, 1996

PARALLEL CONCURRENCE REQUESTED

F. CAMERON, OGC

B. MORRIS, RES

D. COOL, IMNS

LETTER TO: AUBREY V. GODWIN, DIRECTOR
ARIZONA RADIATION REGULATORY AGENCYFROM: PAUL H. LOHAUS, DEPUTY DIRECTOR
OFFICE OF STATE PROGRAMS

SUBJECT: ARIZONA QUESTIONS THORIA-ALLOY

YOUR CONCURRENCE IS REQUESTED BY C.O.B. OCTOBER 18, 1996.

OSP CONTACT: LLOYD BOLLING (415-2327)

PLEASE CALL KATHALEEN KERR (415-3340) FOR PICK UP.

(FYI)

ELB2
PAL
SCD

EXECUTIVE TASK MANAGEMENT SYSTEM

<<< PRINT SCREEN UPDATE FORM >>>

TASK # - 6S199

DATE- 08/08/96

MAIL CTRL. - 1996

TASK STARTED - 08/08/96

TASK DUE - / /

TASK COMPLETED - / /

TASK DESCRIPTION - 8/6 E-MAIL RE SCRAP METAL INVESTIGATION - MATERIAL
DISCOVERED AT EMCO RECYCLING

REQUESTING OFF. - AZ

REQUESTER - A. GODWIN

WITS - 0 FYP - N

PROG.- LAB

PERSON -

STAFF LEAD - LAB

PROG. AREA -

PROJECT STATUS -

OSP DUE DATE:

PLANNED ACC. - N

LEVEL CODE - 1