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Reply to Attn of MD-ESB

U.S. NUCLEAR REG.  
COMMISSION  
MAIL SECTION

UNITED STATES NUCLEAR  
REGULATORY COMMISSION  
ATTN: MR. PAUL GUINN  
MATERIAL LICENSING BRANCH  
DIVISION OF FUEL CYCLE AND  
MATERIAL SAFETY  
WASHINGTON, D.C. 20555

SUBJECT: ADDITIONAL INFORMATION FOR RENEWAL AND AMENDMENT OF NRC LICENSE  
NO. 09-11149-02 (REFERENCE NRC CONTROL NO. 97374)

REFS: (1) NRC LETTER TO NASA/JFKSC, DATED MARCH 25, 1980; SAME SUBJECT  
(2) TELECON BETWEEN THE BIOMEDICAL OFFICE AND PAN AMERICAN HEALTH  
PHYSICS ON MAY 5, 1980; SAME SUBJECT

THE FOLLOWING ADDITIONAL INFORMATION IS PROVIDED TO YOUR OFFICE IN SUPPORT  
OF THE REVIEW OF THE SUBJECT RADIOACTIVE MATERIAL LICENSE APPLICATION.

1. REGARDING THE NRC CONCERNS RELATIVE TO THE RESPONSIBILITIES AND  
AUTHORITIES OF THE KSC RADIATION PROTECTION COMMITTEE TO THE OVERALL KSC  
RADIATION PROTECTION PROGRAM, WE WISH TO REITERATE THE REQUIREMENTS SET  
FORTH IN THE FOLLOWING:

- A. KENNEDY MANAGEMENT INSTRUCTION 1150.9D, "KSC PROTECTION  
COMMITTEE."
- B. KENNEDY MANAGEMENT INSTRUCTION 1860.1A, "RADIATION PROTECTION  
PROGRAM - POLICIES AND GENERAL PROVISIONS FOR IONIZING AND NON-  
IONIZING RADIATION."

BOTH DOCUMENTS WERE PREVIOUSLY SUBMITTED AS ATTACHMENTS IN THE  
SUPPLEMENT TO ITEM 14 IN THE ORIGINAL APPLICATION.

TO SUMMARIZE, THE KSC RADIATION PROTECTION COMMITTEE IS RESPONSIBLE  
TO THE KSC CENTER DIRECTOR FOR THE KSC RADIATION PROTECTION PROGRAM. ACCORD-  
INGLY, THE COMMITTEE HAS FINAL AUTHORITY IN ALL MATTERS PERTAINING TO RADIATION  
PROTECTION COVERING NASA ORGANIZATION ELEMENTS UNDER KSC JURISDICTION OR DIRECTION,  
INCLUDING ASSOCIATED CONTRACTORS, TENANTS, PRINCIPAL INVESTIGATORS, AND VISITORS.

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800 619 4167 67P

2. RELATIVE TO THE NRC CONCEPT OF THE KSC MAJOR RADIOLOGICAL SOURCE LAUNCH CONTINGENCY DOCUMENTATION (KSC KENNEDY HANDBOOK 1861 SERIES) BEING MADE AN INTEGRAL PART OF THE SUBJECT LICENSE, IT IS NECESSARY TO DEFINE THE SCOPE AND APPLICATION OF THOSE CONTINGENCY DOCUMENTS. THE DOCUMENTS IN QUESTION ADDRESS THE RADIOLOGICAL CONSEQUENCES AS THE RESULT OF A CATASTROPHICALLY ABORTED MISSILE LAUNCH CARRYING LARGE SOURCES OF RADIATION, SPECIFICALLY RADIOISOTOPE THERMOELECTRIC GENERATORS, FUELED WITH MULTI-KILOCURIE QUANTITIES OF  $^{238}\text{Pu}$ . AS A RESULT OF THESE AND OTHER FACTORS, THE LEVEL OF SUPPORT FOR SUCH SPECIAL LAUNCHES FROM A RADIOLOGICAL POINT OF VIEW IS MUCH GREATER AND REQUIRES RESOURCES BEYOND KSC'S NORMAL SUPPORT CAPABILITIES. THE DOCUMENTS IDENTIFY KSC'S CAPABILITY TO MANAGE RADIOLOGICAL CONTINGENCY OPERATIONS. THEY ALSO IDENTIFY THE EXISTENCE OF KSC RESOURCES TO SUPPORT SUCH OPERATIONS ON A SMALLER SCALE, I.E., MINOR RADIOACTIVE SOURCE LAUNCHES. HOWEVER, IT MUST BE NOTED THAT THESE SPECIFIC DOCUMENTS WERE NOT ORIGINALLY DESIGNED TO SUPPORT MINOR SOURCE LAUNCHES. THEREFORE, THEIR UTILIZATION IS CONSIDERED INAPPROPRIATE FOR MINOR SOURCE LAUNCH SUPPORT.

RADIOLOGICAL CONTINGENCY SUPPORT LEVELS FOR MINOR SOURCE LAUNCHES ARE DETERMINED ON A CASE-BY-CASE BASIS AS A RESULT OF A HAZARDS REVIEW. PLANNING AND SUPPORT OF MINOR SOURCE LAUNCH CONTINGENCY OPERATIONS ARE UNDER THE DIRECT PURVIEW OF THE KSC RADIATION PROTECTION COMMITTEE THROUGH THE KSC RADIATION PROTECTION OFFICER AND THE HEALTH PHYSICS CONTRACTOR.

IN SUMMARY, THE SUBJECT CONTINGENCY DOCUMENTS MAY BE VIEWED AS REPRESENTATIVE EXAMPLES OF KSC'S DEDICATION AND CAPABILITY TO MANAGE EXTREME SITUATIONS AS A RESULT OF LAUNCH RELATED RADIOLOGICAL CONTINGENCIES AT KSC BUT NOT AS THE NORMAL SUPPORT EFFORT FOR MINOR SOURCE LAUNCHES.

3. IN ACCORDANCE WITH COMMENTS REGARDING THE SUPPLEMENT TO ITEM 15, PLEASE DELETE THE ORIGINALLY SUBMITTED SUPPLEMENT AND REPLACE WITH THE FOLLOWING:

SUPPLEMENT TO ITEM 15

RADIOACTIVE WASTE ON KSC/CCAFS IS COLLECTED BY THE HEALTH PHYSICS CONTRACTOR. RADIOACTIVE WASTE WILL BE STORED IN CONTROLLED FACILITIES AS APPROVED BY THE KSC RADIATION PROTECTION COMMITTEE. DISPOSAL WILL BE IN ACCORDANCE WITH THE PROVISIONS OF 10 CFR 20.

4. IN ADDITION TO THE ABOVE SPECIFIC COMMENTS RELATIVE TO THE REFERENCED COMMUNICATIONS, THE FOLLOWING REQUESTED CHANGES IN THE ORIGINAL LICENSE APPLICATION, DATED NOVEMBER 17, 1978, ARE SUBMITTED FOR INCLUSION IN THE LICENSE.

A. REFERENCE ITEM 4

(1) DELETE "PERRY H. WILLIAMS" AS THE RADIATION PROTECTION OFFICER AND REPLACE WITH "JOHN H. DOUGLAS."

(2) DELETE "WILLIAM C. WILLMOT" AS THE EMERGENCY PREPAREDNESS OFFICER AND REPLACE WITH "PAT J. MONGILLO, II."

B. REFERENCE SUPPLEMENT TO ITEM 6 (A) AND (B), SUBITEM 2

CHANGE FROM "KRYPTON-85 NOT TO EXCEED 5 CURIES PER SOURCE"  
TO "KRYPTON-85 NOT TO EXCEED 10 CURIES PER SOURCE IN  
GASEOUS FORM."

C. REFERENCE SUPPLEMENT TO ITEM 6 (A) AND (B), SUBITEM 3

CHANGE FROM "11 CURIES TOTAL NOT TO EXCEED 11 CURIES PER  
SOURCE" TO "14 CURIES TOTAL NOT TO EXCEED 7 CURIES PER  
SOURCE."

D. REFERENCE SUPPLEMENT TO ITEM 7, 6.A.(1, 2, 3, 4, 5)

ADD "AND LEAK TESTING."

E. REFERENCE SUPPLEMENTS TO ITEMS 8 AND 9

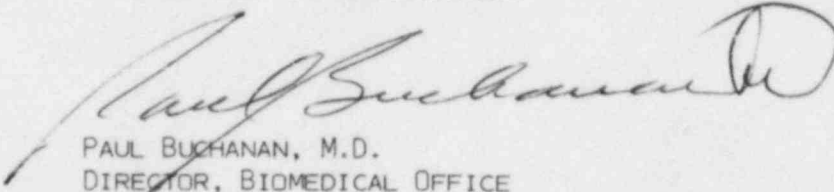
REPLACE THE KSC FORMS 16-294 (RADIATION TRAINING AND EXPERIENCE  
SUMMARY) FOR WILLIAM C. WILLMOT AND PERRY H. WILLIAMS WITH KSC  
FORMS 16-294 (RADIATION TRAINING AND EXPERIENCE SUMMARY) FOR  
JOHN H. DOUGLAS AND PAT J. MONGILLO, II.

F. REFERENCE SUPPLEMENT TO ITEM 14, PAGE 3, LAST SENTENCE

ADD "...EXCEPT AS SPECIFICALLY PROVIDED BY 10 CFR 20.103 (C)  
AND (D)."

THE ABOVE REQUESTED MODIFICATIONS ARE NECESSARY DUE TO PERSONNEL AND  
PROGRAMMATIC CHANGES AT KSC SINCE THE SUBJECT APPLICATION WAS SUBMITTED.

YOUR PROMPT CONSIDERATION OF THE ABOVE AND THE ORIGINAL APPLICATION  
WILL BE GREATLY APPRECIATED.



PAUL BUCHANAN, M.D.  
DIRECTOR, BIOMEDICAL OFFICE

ENCLOSURES

1. KSC FORM 16-294 (JOHN H. DOUGLAS)
2. KSC FORM 16-294 (PAT J. MONGILLO, II)

# RADIATION TRAINING AND EXPERIENCE SUMMARY

(REQUEST FOR APPROVAL OF IONIZING RADIATION SOURCE CUSTODIAN OR USER)

(Use supplemental sheets if necessary)

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection .....	See Supplemental Sheet.		Yes    No	Yes    No
b. Radioactivity measurement standards and monitoring techniques and instruments .....			Yes    No	Yes    No
c. Mathematics and calculations basic to the use and measurement of radioactivity .....			Yes    No	Yes    No
d. Biological effects of radiation .....			Yes    No	Yes    No

**EXPERIENCE** (Prior actual handling or operating experience)  
(Fill in below)

Yes ☒ No ☐ Radioactive Material

Radioisotope	Max. Amt.	Location	Duration of Experience	Type of Use
See Supplemental Sheet.				

(Fill in below)

Yes ☒ No ☐ Accelerators or X-ray Equipment

Type	Max. Energy	Location	Duration of Experience	Type of Use
Diffraction	Various	Battelle	2.5 yrs.	Safety aspects of units - inspection Same Same
X-Ray	Various	Battelle	2.5 yrs.	
Cyclotron	Variable (88 inch)	Texas A&M Univ.	1.5 yrs.	

I certify that I have read and understand the following:

Yes ☒ No ☐ NRC ~~XX~~ REGULATIONS, 10 CFR 20 & 10 CFR 19  
 Yes ☒ No ☐ KMI 1860.1  
 Yes ☒ No ☐ KHB 1860.1  
 Yes ☒ No ☐ FLORIDA REGULATIONS, CHAPTER 10D - 56\*

*John H. Douglas*  
SIGNATURE OF APPLICANT AS

☒ USER ☒ CUSTODIAN ☒ KSC-RPO

I have reviewed the above and recommend approval

*R.K. Hall*  
OEHHS, HEALTH PHYSICS

DATE

*5/9/80*  
DATE

## APPROVALS

KSC RPO \_\_\_\_\_ Date \_\_\_\_\_  
 CHAIR, RSC *G.W. Hopper* Date *9 MAY 80*

REMARKS

\* APPLICABLE TO NON-FEDERAL RADIATION USERS AT KSC.

ORIGINAL - RSC COPY 1 - KSC RPO COPY 2 - OEHHS HEALTH PHYSICS  
 KSC FORM 16-204(PA)(5/73)

John H. Douglas  
NASA/MD-R

Page 1 of 3

## RADIATION TRAINING AND EXPERIENCE SUMMARY (CONTINUED)

JOHN H. DOUGLAS

### TYPE OF TRAINING

#### a. Principles and Practices of Radiation Protection

<u>Where Trained</u>	<u>Duration of Training</u>	<u>On the Job</u>	<u>Formal Course</u>
1) Louisiana State University	1.5 Yrs.		Yes
2) Texas A&M University	2.0 Yrs.		Yes
3) Texas A&M University	2.0 Yrs.	Yes	
4) Battelle	2.5 Yrs.	Yes	

#### b. Radioactivity Measurement Standardization and Monitoring Techniques and Instruments

Same as above

#### c. Mathematics and Calculations Basic to the Use and Measurement of Radioactivity

Same as above

#### d. Biological Effects of Radiation

Same as above

### EXPERIENCE - RADIOACTIVE MATERIAL

<u>Radionuclide</u>	<u>Max. Amt.</u>	<u>Location</u>	<u>Duration of Experience</u>	<u>Type of Use</u>
Atomic Nos. 1 - 83	Multicurie amounts	Battelle N.W.	2.5 Yrs.	Research and Development
Mixed Fission Products	Multi-Mega Curie	Same	Same	Same
233, 235, 238 Uranium	Multi Kilogram	Same	Same	Same
238, 239 Pu	Multi Kilogram Quantities	Same	Same	Same

RADIATION TRAINING AND EXPERIENCE SUMMARY (CONTINUED)JOHN H. DOUGLASEXPERIENCE - RADIOACTIVE MATERIAL (CONTINUED)

<u>Radionuclide</u>	<u>Max. Amt.</u>	<u>Location</u>	<u>Duration of Experience</u>	<u>Type of Use</u>
Accelerator Produced Isotopes	From mCi to Ci Quantities	Texas A&M University	2.0 Yrs.	Research
$^{252}\text{Cf}$	Multi Milligram	Battelle N.W.	2.5 Yrs.	Research and Development
$^{244}\text{Cm}$	Multi gram	Same	Same	Same

Remarks

During the period August 1972 through April 1980, employment was with the AEC, NRC, and DOE (ERDA). Experience was gained in the audit, appraisal, and management of radiation protection programs.



# RADIATION TRAINING AND EXPERIENCE SUMMARY

\* (REQUEST FOR APPROVAL OF IONIZING RADIATION SOURCE CUSTODIAN OR USER)

(Use supplemental sheets if necessary)

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection .....	USAR - NUCLEAR OFFICERS WEAPONS COURSE	2 WEEKS	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
b. Radioactivity measurement standardization and monitoring techniques and instruments .....	COMMAND AND GENERAL STAFF SCHOOL	40 HRS	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
c. Mathematics and calculations basic to the use and measurement of radioactivity .....			Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Biological effects of radiation .....	SAME AS ABOVE		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

## EXPERIENCE (Prior actual handling or operating experience)

(Fill in below)

Yes ☒ No ☐

### Radioactive Material

Radionuclide	Max. Amt.	Location	Duration of Experience	Type of Use
UNKNOWN	UNKNOWN	USAR - TRAINING ACTIVE DUTY	40 HRS AND INSTRUCTOR	TRAINING

(Fill in below)

Yes ☐ No ☐

### Accelerators or X-ray Equipment

Type	Max. Energy	Location	Duration of Experience	Type of Use
NONE				

I certify that I have read and understand the following:

Yes ☒ No ☐  
 Yes ☒ No ☐  
 Yes ☒ No ☐  
 Yes ☐ No ☐

NRC ~~XX~~ REGULATIONS, 10 CFR 20

KMI 1860.1

KHB 1860.1

FLORIDA REGULATIONS, CHAPTER 100 - 56\*

*Joseph J. Mangillo II*

SIGNATURE OF APPLICANT AS

☐ USER

☐ CUSTODIAN

☒ MEMBER - RPC

DATE

I have reviewed the above and recommend approval

OMEHS, HEALTH PHYSICS

DATE

### APPROVALS

KSC RPO

*John A. Doyle*

Date

*5/12/80*

Chm. RSC

*John A. Doyle*

Date

*5/12/80*

REMARKS

\* APPLICABLE TO NON-FEDERAL RADIATION USERS AT KSC.

ORIGINAL - RSC COPY 1 - KSC RPO COPY 2 - OMEHS HEALTH PHYSICS

NASA KSC MAY 73

KSC FORM 16-294 (5/73)