

Kennedy Space Center

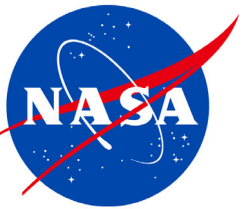
 Medical and Environmental Services Division

KSC Radiation Protection Program

Kurt Geber, CHP
Kennedy Space Center

May 5, 2026

Florida Department of Health
Advisory Council on Radiation Protection



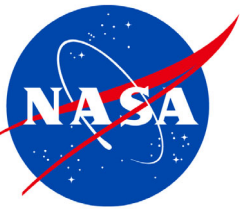
Outline



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 Medical and Environmental Services Division

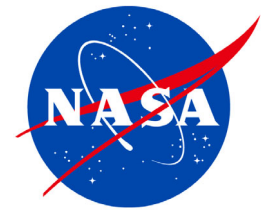
- ◆ Overview of NASA
- ◆ Overview of Kennedy Space Center
- ◆ KSC Radiation Protection Program
 - Functional Structure
 - Roles and Responsibilities
 - Inventories
 - Radiation Use Request/Authorization Process
 - Routine Health Physics Office Support
 - Major Radiological Source Missions
 - Radiological Contingency Planning



◆ OVERVIEW

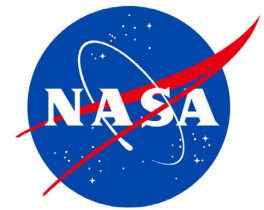
- NASA is organized under a central leadership team at Headquarters in Washington, D.C., led by Administrator Jared Isaacman. The agency operates through five main Mission Directorates—Science, Space Operations, Exploration Systems Development, Space Technology, and Aeronautics—supported by a nationwide network of 10 field centers and facilities





Kennedy Space Center --- Medical and Environmental Services Division



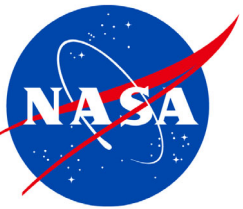


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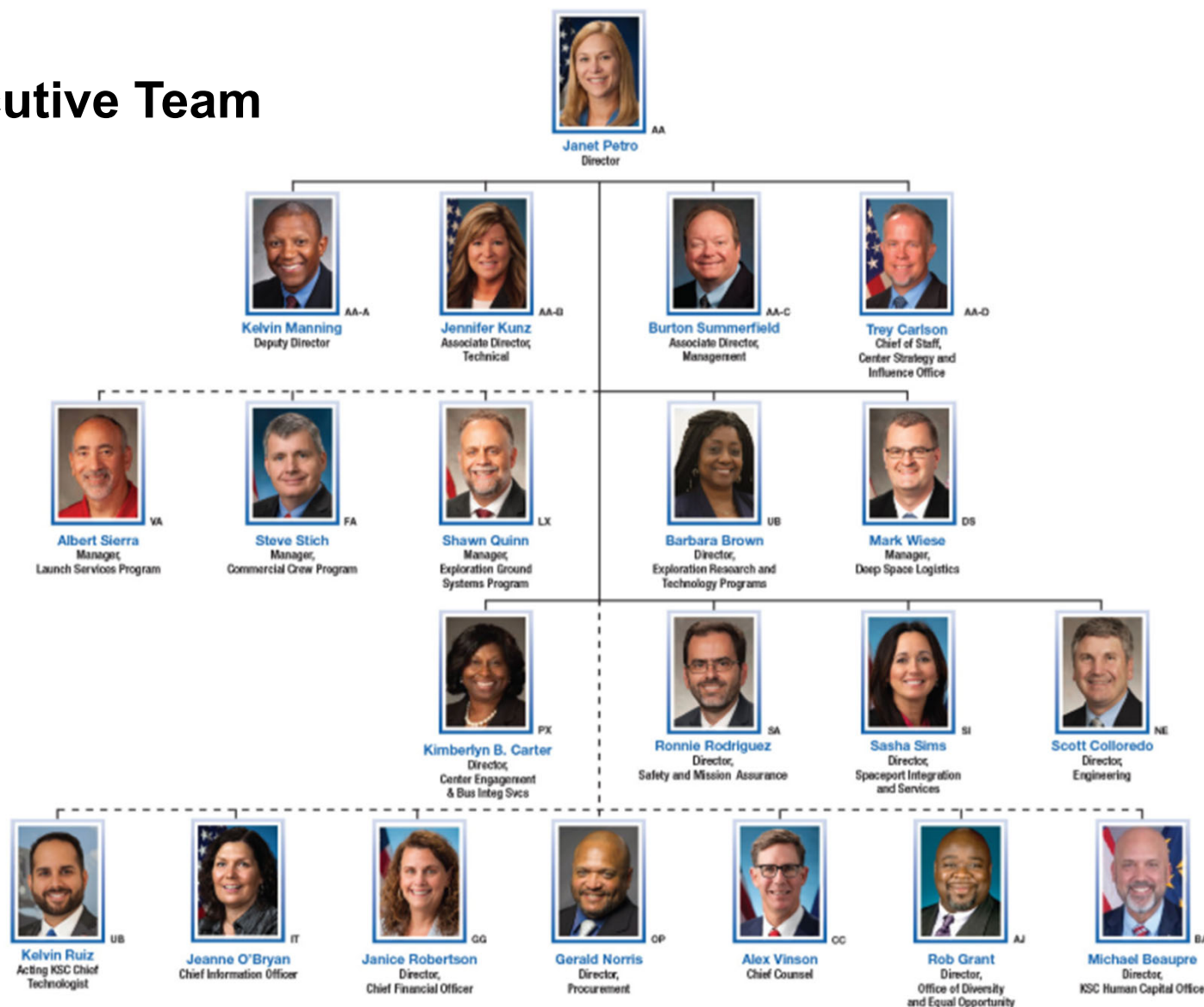
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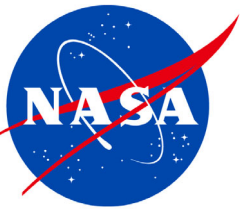
◆ Premier Multi-user Spaceport



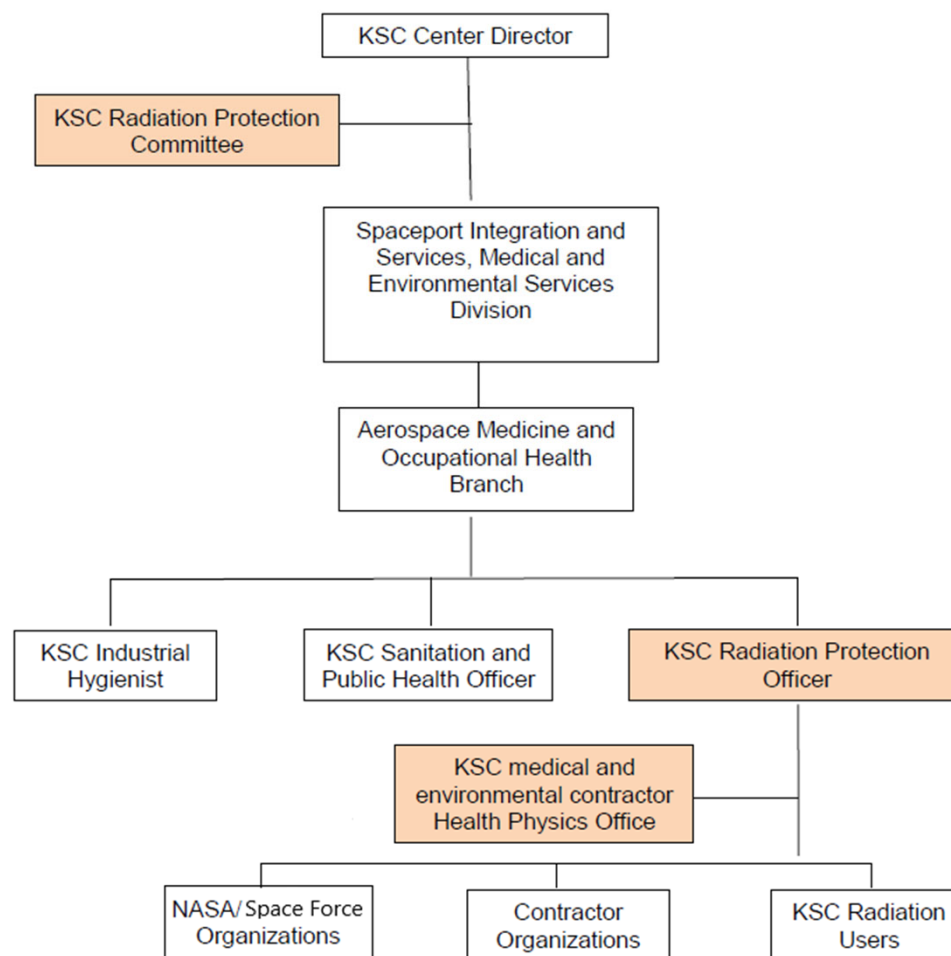


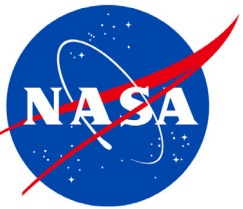
◆ Executive Team





◆ Functional Structure of the KSC Radiation Protection Program



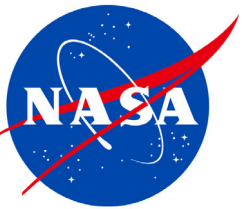


◆ Radiation Protection Program Roles & Responsibilities

- **Radiation Protection Committee**
a committee composed of representatives from various organizations to ensure adequate protection of personnel under KSC jurisdiction from the harmful effects of nonionizing radiation

- **Radiation Protection Officer**
the representative from the Spaceport Integration and Services Aerospace Medicine and Occupational Health Branch who is authorized to serve as an executive member of the RPC and act for KSC on all matters related to ionizing & nonionizing radiation protection

- **Health Physics Office**
the NASA support contractor providing day-to-day implementation of the KSC radiation protection program

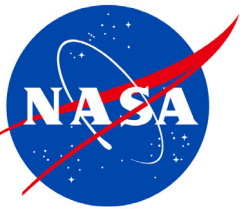


◆ Ionizing Radiation Source Inventories

- Radioactive Materials – 106
- Radiation Generating Devices - 57

◆ Nonionizing Radiation Source Inventories

- Lasers – 294
- Radiofrequency – 202
- Nonlaser Optical – 196
- Optical Fiber - 4



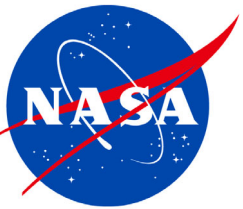
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◆ Radiation Use Authorization Process

- User organization /representatives
- Description
- Licensing
- Proposed use
- Proposed users
- Procedures
- Training & experience
- Use and storage locations
- Period of use
- Approvals

Radiation Use Request / Authorization (Radioactive Materials)				
Instructions for completion on page 2 Use supplemental pages as needed				
Originator Name / Telephone Number		Organization / Mail Code or Address		Date
Radiation Use Authorization No.				
I. A. Description of Radioactive Materials				
Quantity	Radionuclide	Activity (units)	Physical / Chemical Form	Description of Source(s)
B. Radioactive Waste Generated			C. Licensing (attach copy)	
☐ No ☐ Yes Concentrations / Amounts			☐ NRC	
II. Proposed Use and				
Use Area:				
Bldg. No. _____				
Other _____				
Storage Area:				
Bldg. No. _____				
IV. Identifi				
Area Radiation Officer _____				
Use Supvr / Custodian _____				
Users _____				
(Submit completed KSC Form				
VI. Originator				
Area Radiation Officer _____				
VII. Health Physics				
KSC Radiation Protection Officer _____				
45 SW Radiation Safety Officer (if ap				
Chmn. KSC Radiation Protection Co				
RADIATION TRAINING AND EXPERIENCE SUMMARY (IONIZING RADIATION)				
Please Type/Print Legibly				
Instructions for completion on next page				
I. GENERAL INFORMATION				
A. Applicant Name		B. Telephone	C. Organization / Mail Code or Address	D. Email Address
F. Function/Duties		G. Source / System / Device to be Used		
☐ Area Radiation Officer ☐ Maintenance				
☐ Use Supervisor / Custodian ☐ User ☐ Other				
II. TRAINING (use supplemental sheets as needed)				
COURSE TITLE/NUMBER	LOCATION	TRAINING DATE	DURATION	
A. Ionizing Radiation Protection Orientation				
B. Other				
III. EXPERIENCE (use supplemental sheets as needed)				
A. Radioactive Materials ☐ Yes ☐ No (describe below)				
RADIONUCLIDE	MAXIMUM AMOUNT	LOCATION	TYPE OF USE	DURATION
B. Accelerator or X-Ray Equipment ☐ Yes ☐ No (describe below)				
TYPE	MAXIMUM ENERGY	LOCATION	TYPE OF USE	DURATION
	kV mA			
	kV mA			
	kV mA			
	kV mA			
IV. REFERENCE DOCUMENTS				
I have read and understand applicable portions of the following:				
A. KNPR 1860.1		B. NRC Regulations, 10 CFR 19 and 20		C. KNPD 1860.1
D. 45th SWI 40-201		E. Fla. Regulations, Chapter 64E-5		F. Applicable Radiation Use Authorization
I understand the guidelines and requirements specified in the above documentation as they pertain to the proposed use of radiation sources, and I hereby affirm to ensure the safe use of all radiation sources under my charge at all times				
Signature of Applicant		Date		
V. AUTHORIZING SIGNATURES				
Health Physics				Date
KSC Radiation Protection Officer				Date
45th SW Radiation Safety Officer (if applicable)				Date
Chmn. KSC Radiation Protection Committee				Date

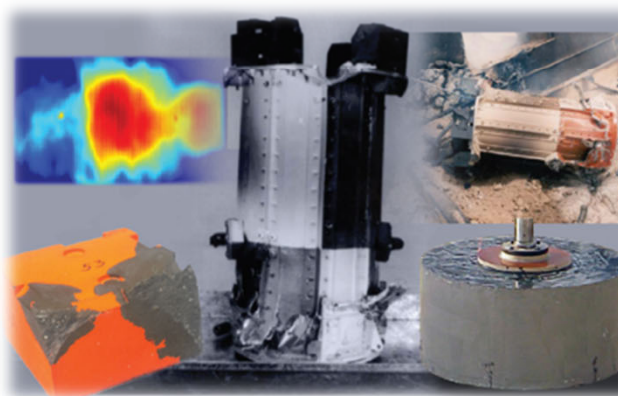
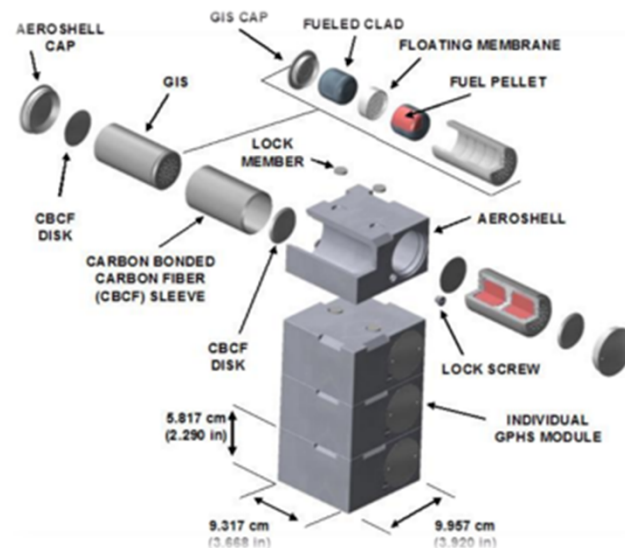
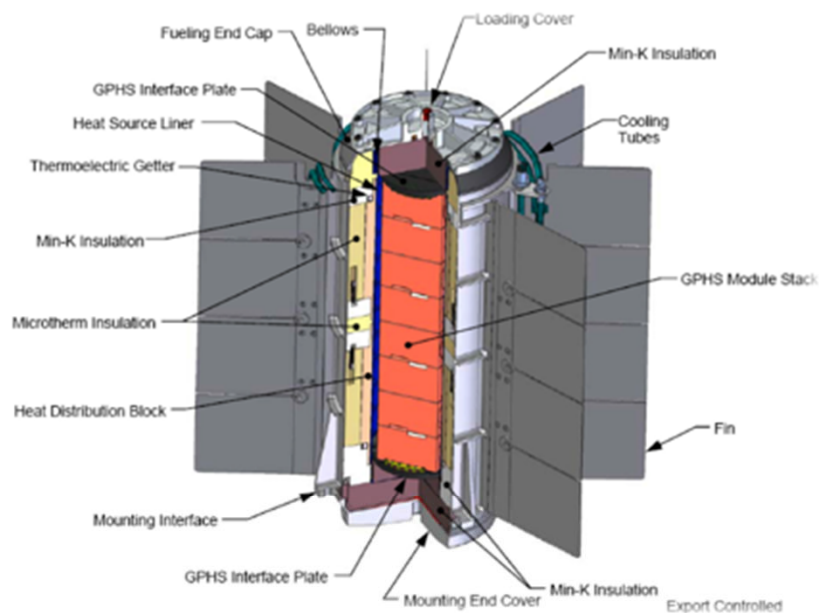


◆ Routine Health Physics Support

- Assess and evaluate radiation use hazards
- Maintain inventories
- Maintain field and lab equipment and instrumentation
- Perform surveys, evaluations, sampling, analysis, and audits
- Process Radiation Use Requests
- Provide initial and periodic radiation protection training
- Collect, monitor, and store low-level radioactive waste
- Leak test in licensed radioactive sources
- Participate in Federal and state inspection visits
- Dosimetry management
- Facilitate the Radiation Protection Committee meetings,

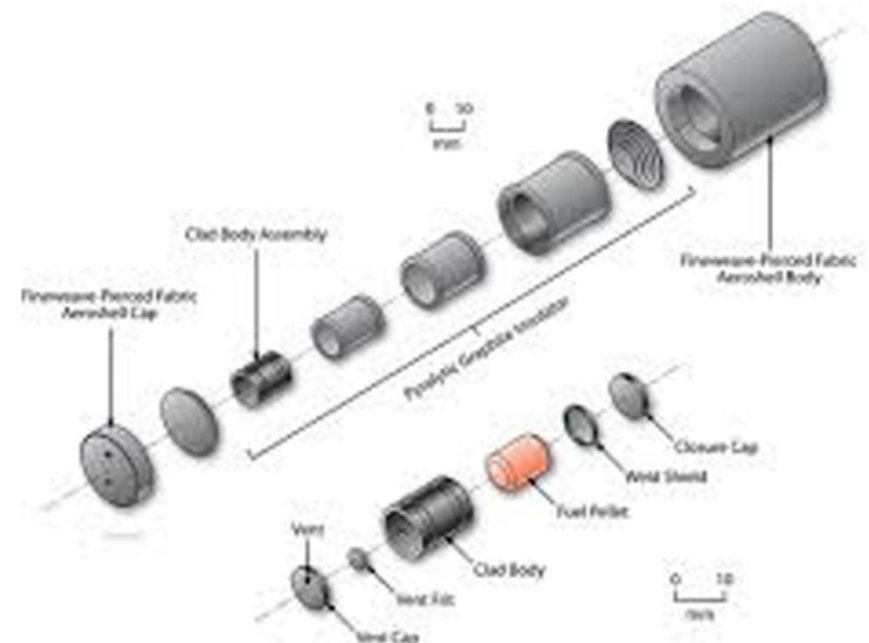
♦ Major Radiological Source Missions

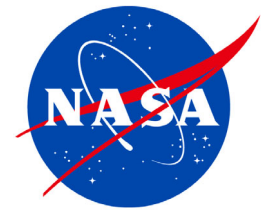
➤ Radioisotope Thermoelectric Generators



♦ Major Radiological Source Missions

- Light-Weight Radioisotope Heater Units

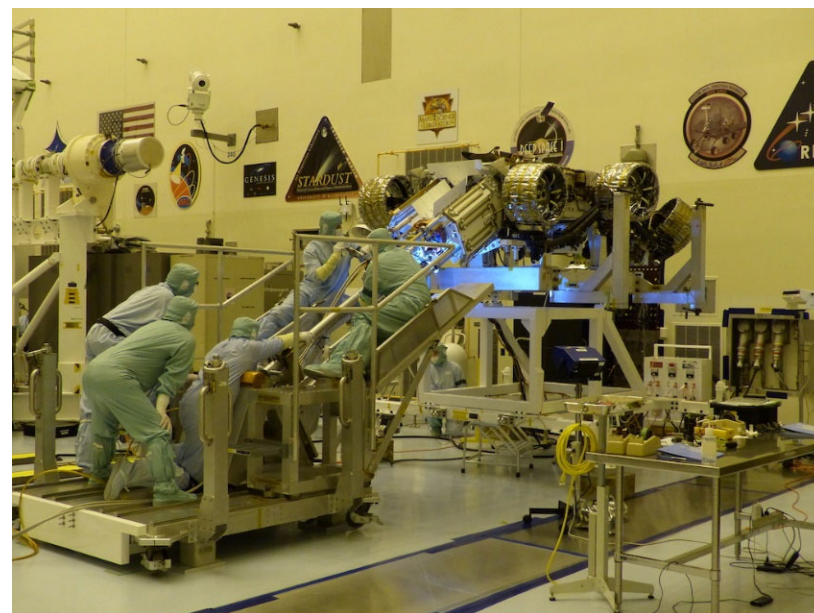


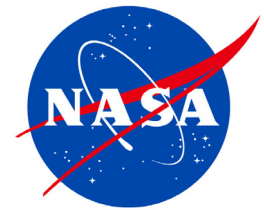


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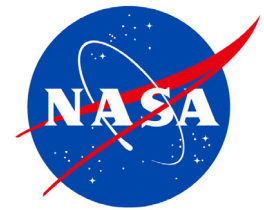
◆ Radioisotope Thermoelectric Generators





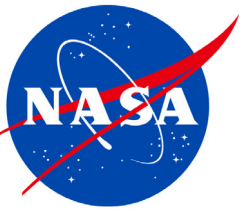
◆ Light-Weight Radioisotope Heater Units





◆ Light-Weight Radioisotope Heater Units

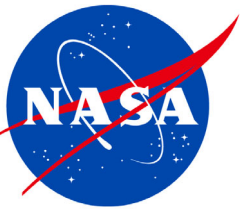




◆ Radiological Contingency Planning

The process that establishes in detail what will be accomplished, when, where, how, and by whom in the event of a launch mishap involving a major radiological source

1. Notify appropriate agencies in the event of an accident involving potential release of radioactive material
2. Generate public information messages on any mishap that are accurate, timely, consistent, and easily understood
3. Assess whether a release of radioactive material has occurred
4. Quantify and predict the dispersion of any radioactive material released
5. Formulate & recommend appropriate protective actions to be taken onsite and offsite
6. Support smooth transition to a Unified Command if needed
7. Address out-of-launch area accidents resulting in sub-orbital or orbital reentry

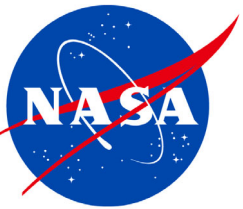


◆ Multi-Agency Concept of Operations

The process that establishes in detail what will be accomplished, when, where, how, and by whom in the event of a launch mishap involving a major radiological source

Federal, State, and Local

- NASA
- DOE / NNSA
- Space Force
- Homeland Security / FEMA
- EPA
- State of Florida
- Brevard County



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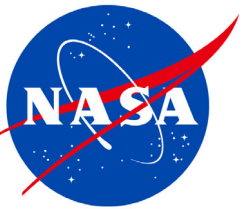
◆ Radiological Control Center

- Data Assessment
- Primary Authority Management
- Joint Information Center

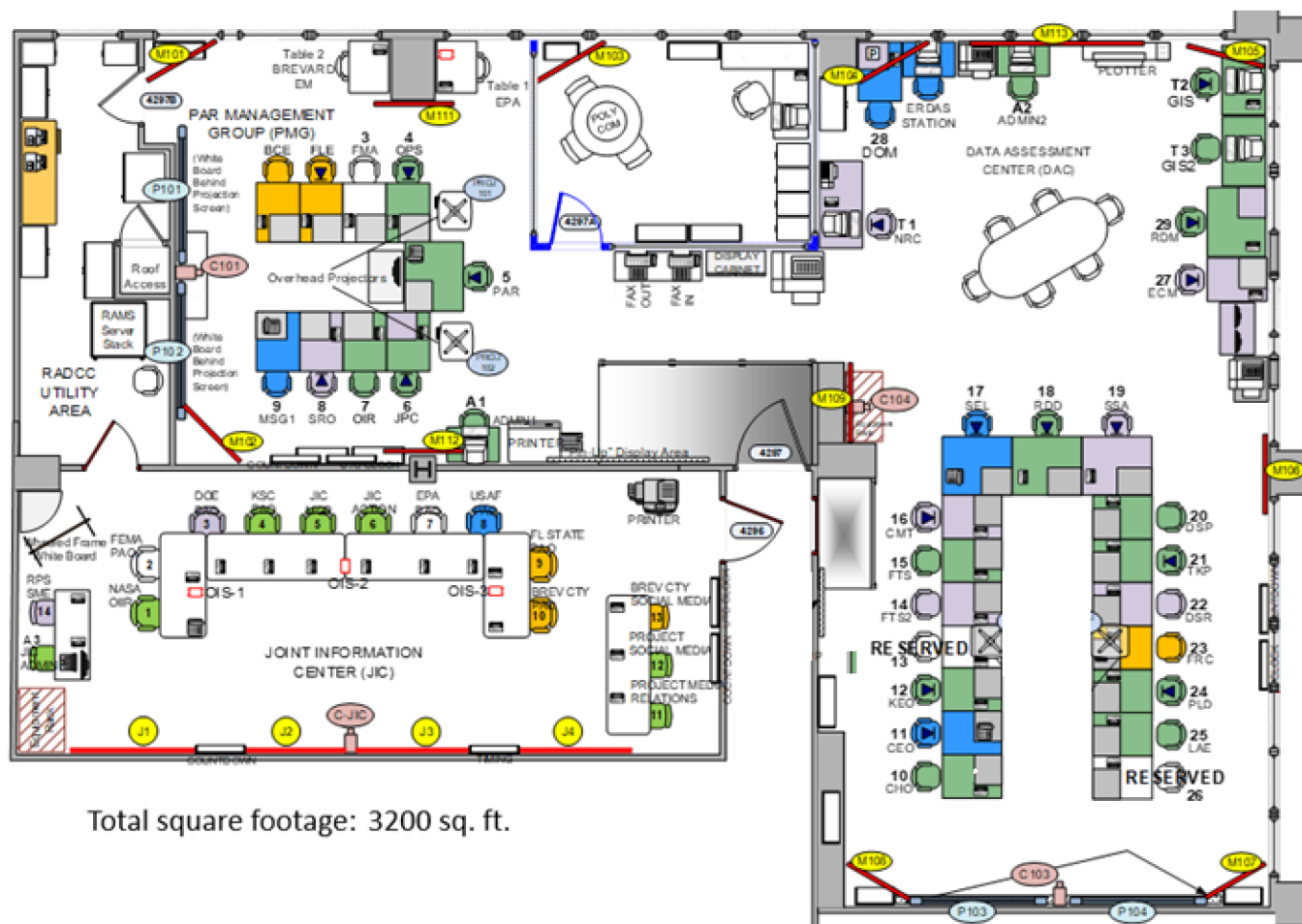
◆ Field Assets

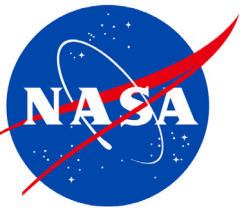
- Radmon Teams
- Deployed environmental air monitors (ECAMS)

◆ Consequence Management Home Team – CMHT



◆ Radiological Control Center

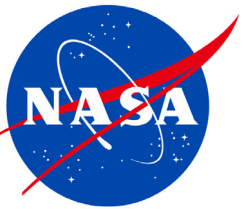




FIELD ASSETS

- ◆ 30 ECAMS
 - 9- onsite
 - 17- offsite
 - 4- mobile
- ◆ 16 Radmon Teams
 - 11- onsite
 - 5- offsite
- ◆ Decon teams
 - 1- Medical
 - 2- Deployed

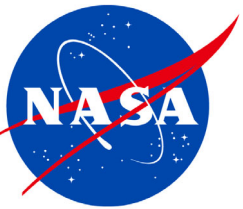




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- ◆ Next major radiological source missions
 - Dragonfly - July 2028
 - Roslind Franklin (RFM) - September 2028
 - Space Reactor-1 Freedom – December 2028
 - Lunar Reactor-1 – FY2030



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QUESTIONS

