

Nuclear Incident Response Programs PONI Briefing

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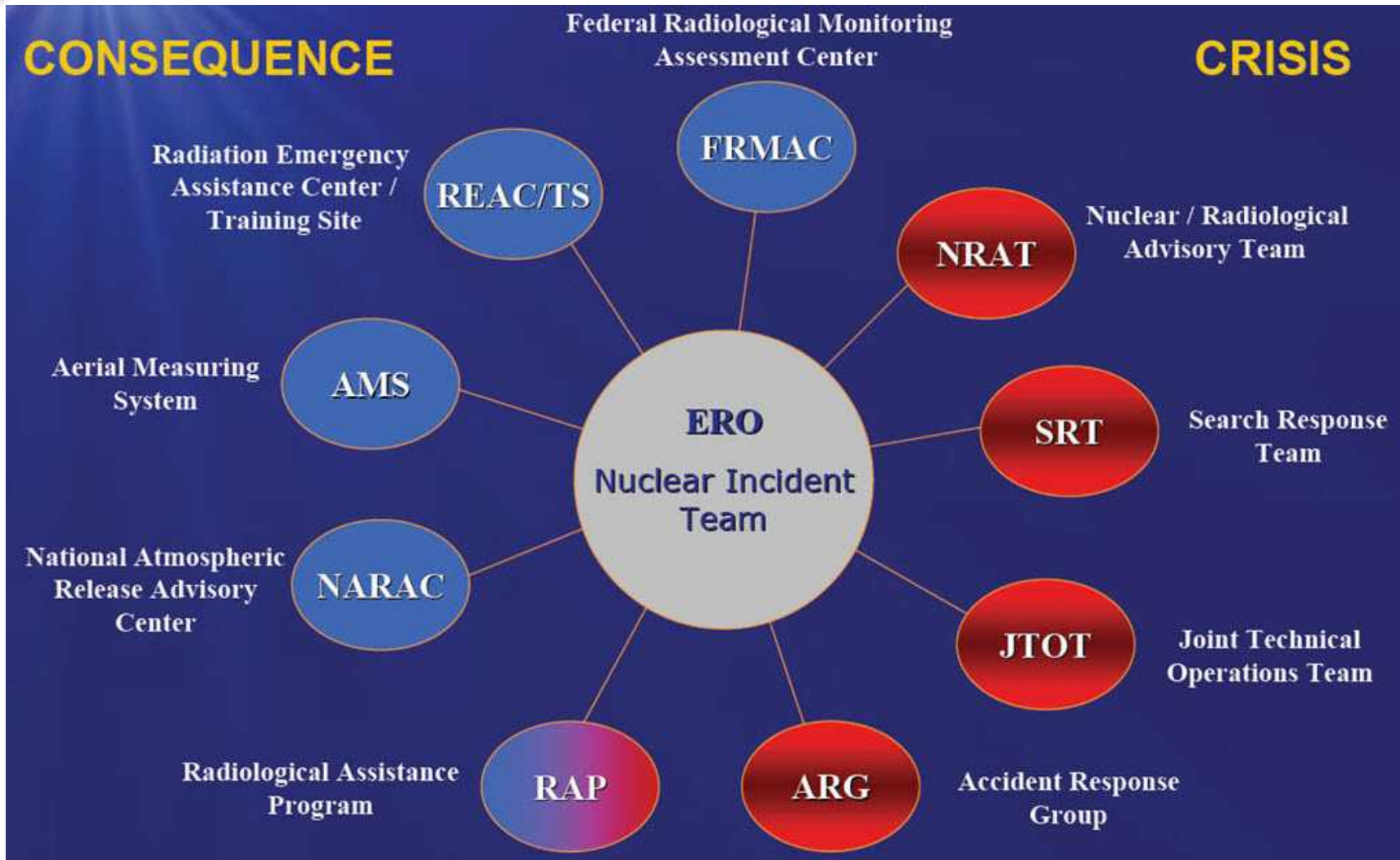
Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company,
for the United States Department of Energy's National Nuclear Security Administration
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Objectives

- **Office of Emergency Response**
- **JTOT**
- **Effects Analyst Skill Set**
- **Skill Set Tools**
- **RDD Training Course**

Office of Emergency Response



Joint Technical Operations Team (JTOT)



- Mission: to provide scientific and technical support of the lead federal agency during all aspects of a nuclear or radiological weapons of mass destruction terrorist incident
- Effects Analyst Skill Set
 - Are trained to have a basic understanding of the components and function of a nuclear weapon along with having a fundamental understanding of the components and function of a radiological dispersal device
 - Have and maintain a good technical understanding of explosives, shock physics and radiation dose levels
 - Are proficient with the effects tool set and are able to assess how predicted results could compare to actual results

JTOT Effects Analyst Tool Set / SHARC

- Focus is on supporting the federal decision-makers in understanding the potential effects due to an RDD or nuclear scenario
- Quick report turnaround time
- Two scenarios available
 - Nuclear Scenario
 - RDD Scenario
- Automated calculation of fatality and casualty estimates using population databases
- Integrated with Turbo FRMAC for health physics calculations
- Fully automated report generation



Prompt (Immediate) Effects					
	Area (km ²)	Extent (m)	Population	Fatalities	Description
	2.11	8.19E2	1.05E5	1.05E5	Fatalities in over 90.0% of population.
	2.79	9.43E2	1.45E5	1.41E5	Fatalities in over 50.0% of population.
	4.37	1.18E3	1.46E5	1.42E5	Fatalities in over 10.0% of population.
	5.12	1.28E3	1.49E5	1.42E5	Major Injuries in over 50.0% of surviving population.
	8.43	1.64E3	1.84E5	1.42E5	Major Injuries in over 10.0% of surviving population.

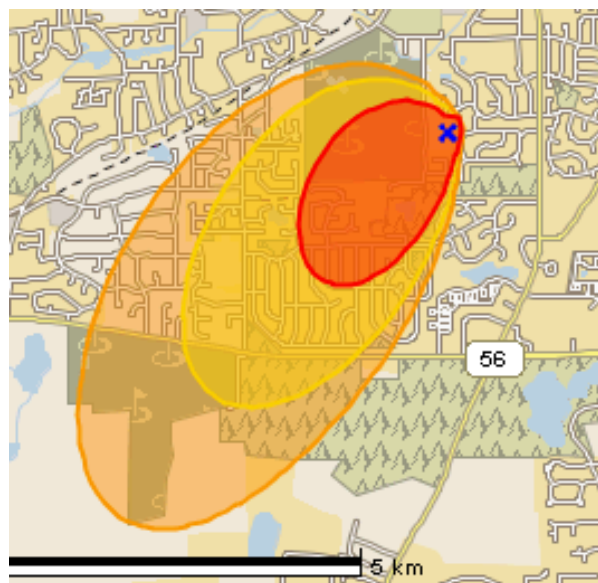
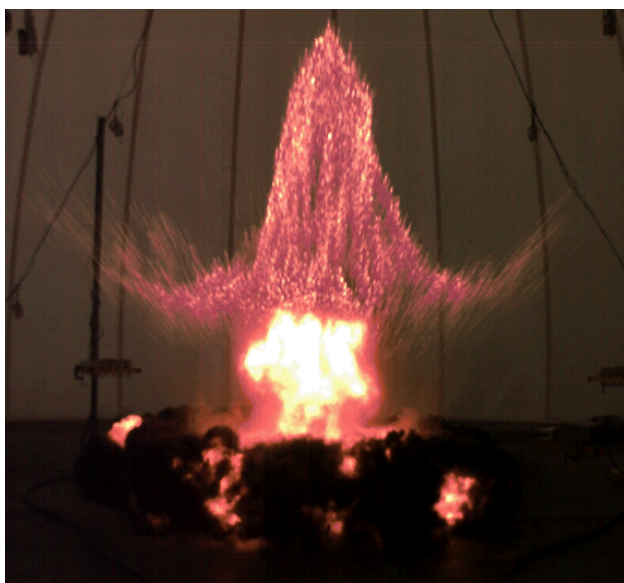
Other Uses for the Effects Analyst and the SHARC Tool Set

- A field test used plume predictions in support of an aircraft sampling the plume this included near real time predictions of plume height, plume width, and plume location vs. time.
- For planning and exercises we identify and assess the hazards associated with different case scenarios including both nuclear and the use of an RDD



RDD Training Course

- Have developed a course that pulls together the wide spread RDD expertise existing at SNL into a training course format.
- This course relays the significant amount of information about RDD's from the subject matter experts spread all around Sandia to the first responders and government officials. Sandia has a strong lead in our R&D and expertise related to the RDD threat.





Questions