This Brief is Classified:

UNCLASSIFIED

Operation TOMODACHI - Japan Tsunami Relief Operations

Rapid Response
Dedicated Force
Enduring Support

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JOINT TASK FORCE CIVIL SUPPORT

UNCLASSIFIED

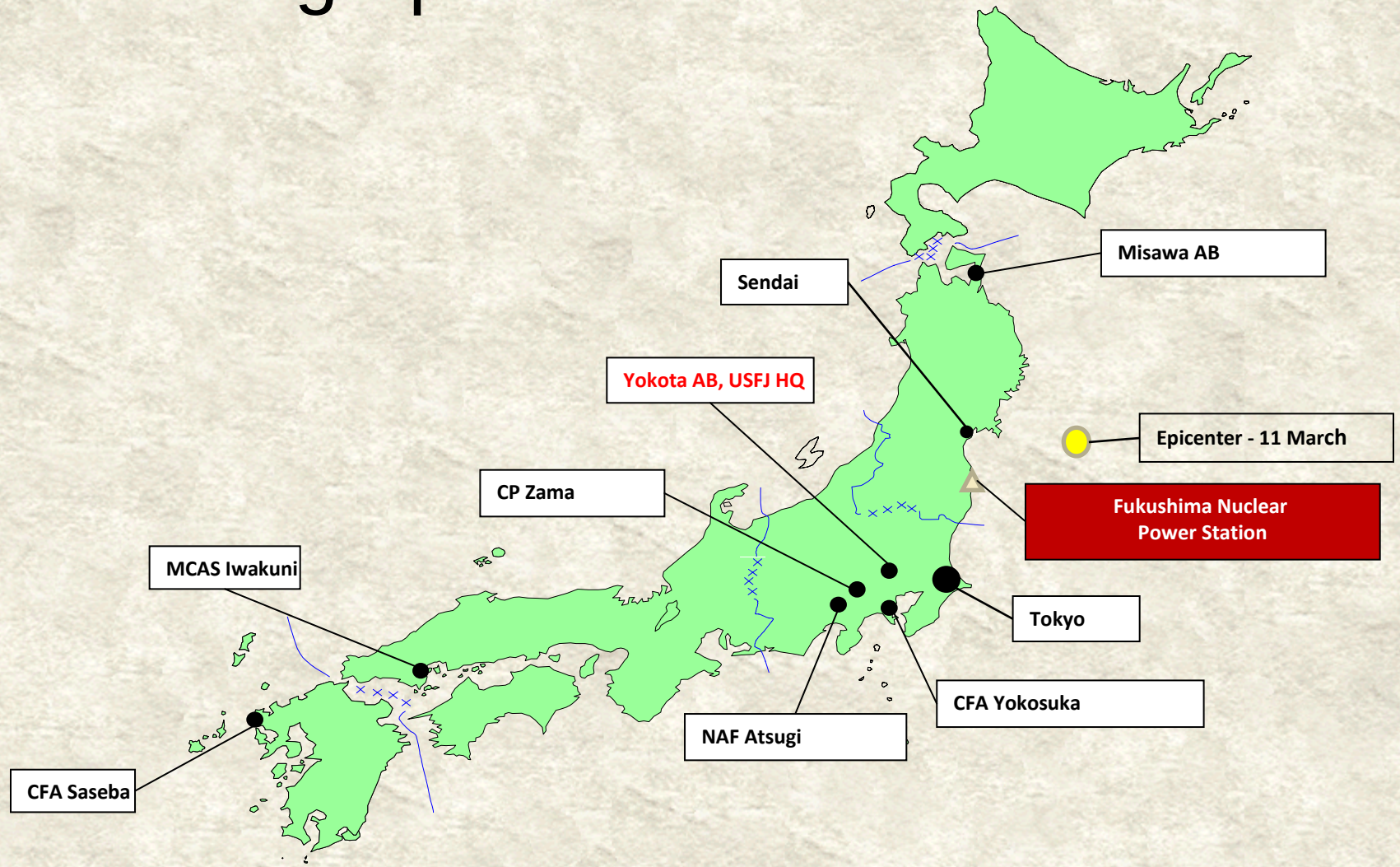
CAPT Shaw's Spring Break 2011

RUN if you see CAPT Shaw headed your way during your Spring Break

More reasons to RUN

- **Every base, post or station where I've ever been stationed has shuttered**
- **My legal career involves showing up at catastrophic incidents**
  - Cavalese ('98)
  - Indonesia tsunami ('05)
  - Somali pirates ('10)
  - TOMODACHI ('11)
  - JTF-CS ('01 – present)

Geographic Orientation



Joint Task Force Civil Support

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Sendai Airport

Sendai Airport

Fukushima Daiichi


NowTheEndBegins.com
Meltdown!

Joint Task Force Civil Support

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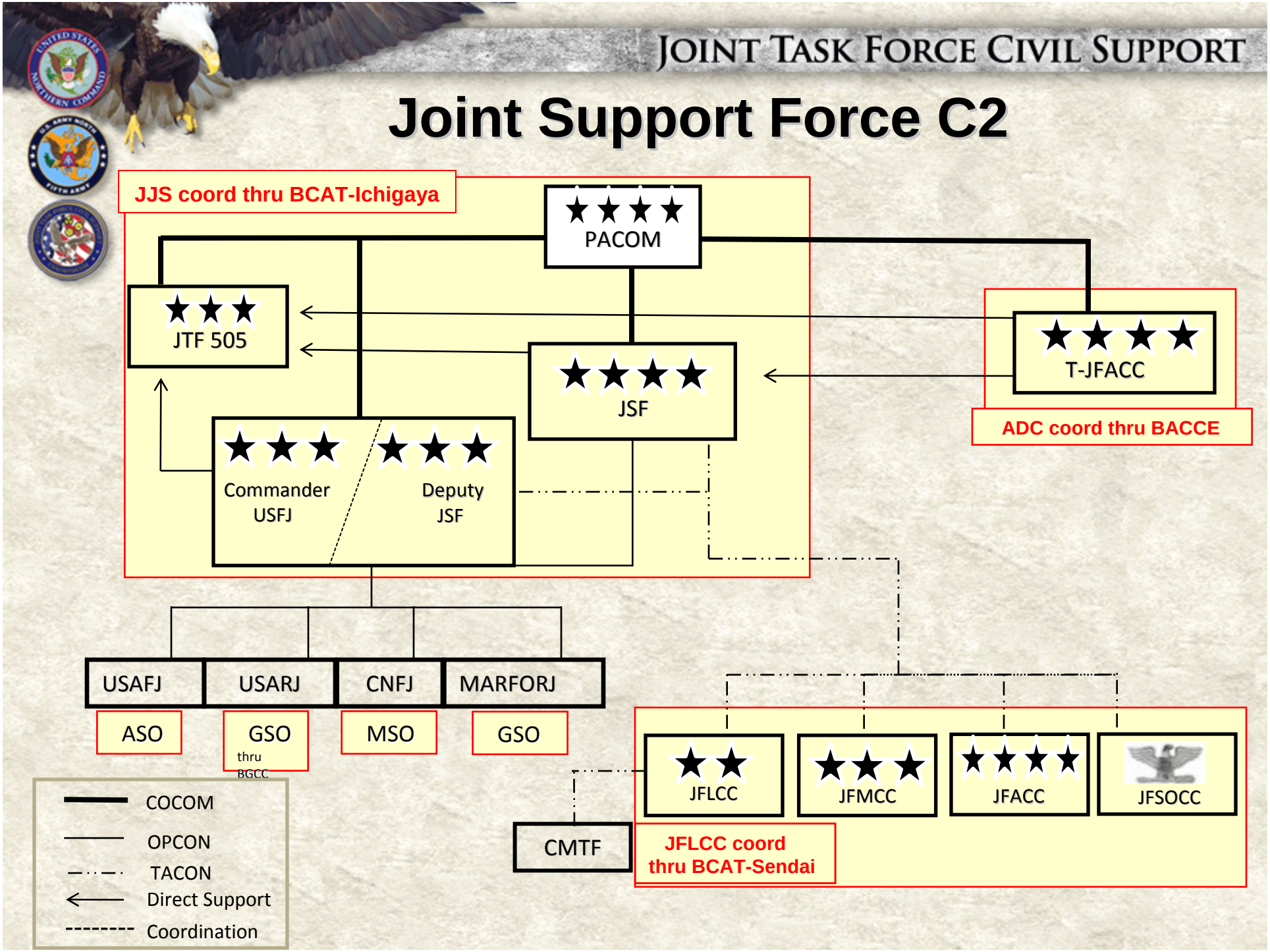
USFJ/5AF SJA Office

JSF OSJA

- **USFJ is a PACOM sub-unified command HQ'd at Yokota AB**
  - USAF 3 Star Commander (Lt Gen Field)
  - Dual-hatted as 5AF CC
  - Col Zeb Pischnotte, USAF, SJA
- **ADM Willard, PACOM Commander transitioned USFJ to JSF Japan (JTF 519)**
  - USN 4 Star PACFLT Commander (ADM Walsh)
  - CAPT Stu Belt, USN, SJA
- **Joint Support Force Japan was the operational HQ for Foreign Consequence Management (FCM)**
- **III MEF designated JTF-505 for Voluntary Departure**
- **3D MARDIV designated JFLCC for HA/DR**

Joint Support Force C2



JOINT TASK FORCE CIVIL SUPPORT

LINES OF OPERATION (LOO)

Lines of Operation

Humanitarian Assistance/ Disaster Relief

1. Distribution of HA/DR Supplies.
2. Emergency medical relief and services.
3. Force Protection (CBRNE).
4. Critical Equipment and Engineering support.
5. Sustainment support to the forces.

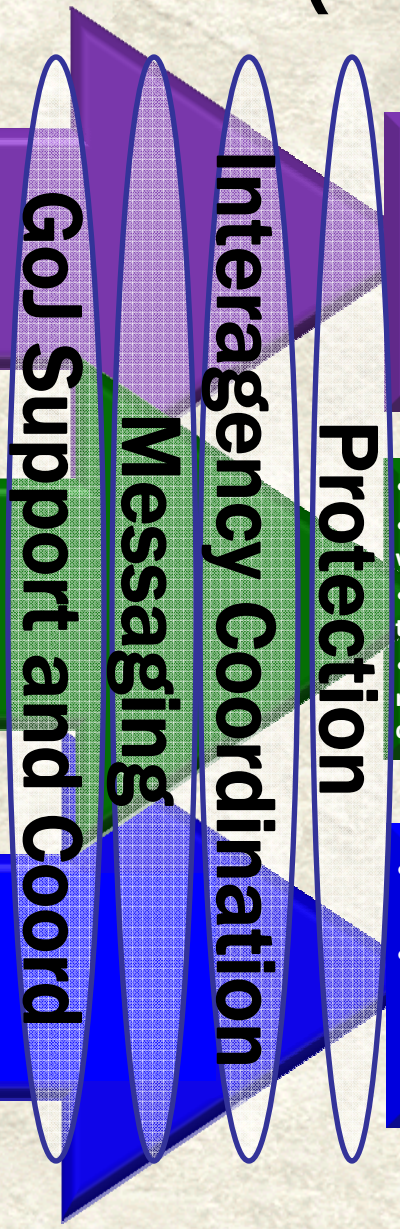
Foreign Consequence Management

1. Conduct radiological survey and reconnaissance.
2. Mitigate spread of contamination of US forces.
3. Optimize Exclusion Operations.
4. Provide Immediate medical assistance to US personnel.
5. Gather and disseminate survey Hazard data.
6. Conduct equipment and mass casualty decontamination.

Authorized Voluntary Departure

1. Coordinate the departure of US military family members.
2. Prepare USFJ bases to support voluntary departure.

Operation PACIFIC PASSAGE



LOO Objectives

- Human suffering minimized
- Crisis situation stabilized
- GoJ and NGOs capable of sustaining operations

- Effects of agents are mitigated
- GoJ CM operations can be sustained with reduced DOD support
- GoJ civil authorities postured to transition to recovery Ops
- GoJ has ability to accommodate surge requirements for casualty treatment & critical support

- Orderly transfer of US citizens to Safe Haven
- Proper documentation of US SOFA personnel

Operation TOMODACHI

- 9.0 earthquake (4th strongest worldwide since 1900)
- 30+ foot tsunami
- 433,000 square kilometers inundated (5 x size of Manhattan)
- Nearly 500,000 evacuated
- 70 miles of coastline submerged
- Water reached inland 6 miles
- 13,228 dead / 14,529 missing / 4,735 injured
- 140,000 homes destroyed / damaged

- **US in support of Japan**
  - **1st world country**
  - **wealthy country**
  - **highly developed technologically**

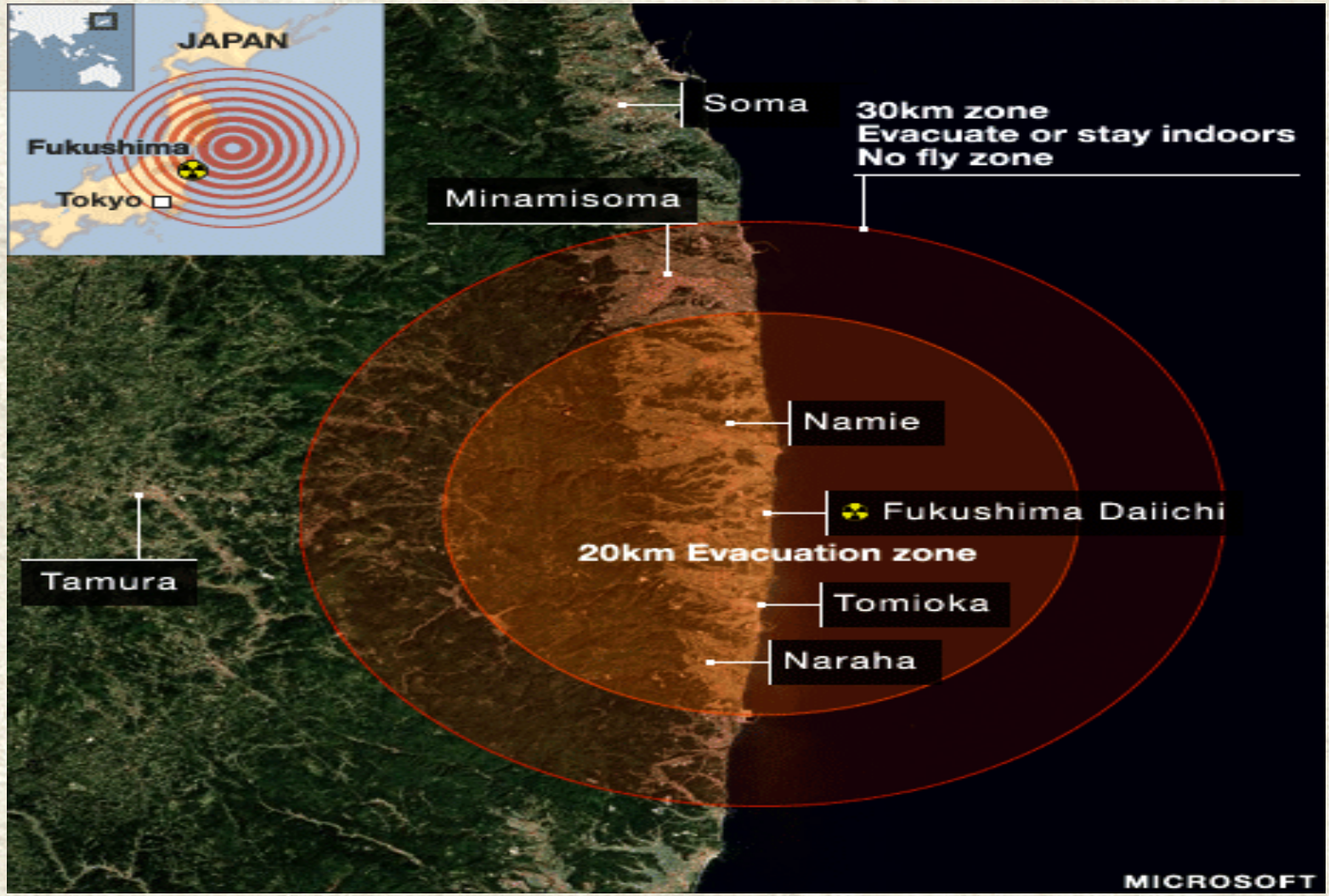
Interesting Coincidences

- **Navy homeported USS George Washington (CVN-73) to Yokosuka in 2008**
  - First nuclear powered vessel homeported there
- **Navy agreed to install and operate radiation monitors on Yokosuka and the surrounding areas**
- **Naval Reactors (NR) had nuclear trained personnel in Yokosuka for this monitoring mission**
- **NR is responsible for the safe and reliable operations of all Navy nuclear propulsion systems and reactors**
  - NR prides itself on operating in the most demanding environments, to the most exacting standards and with no incidents

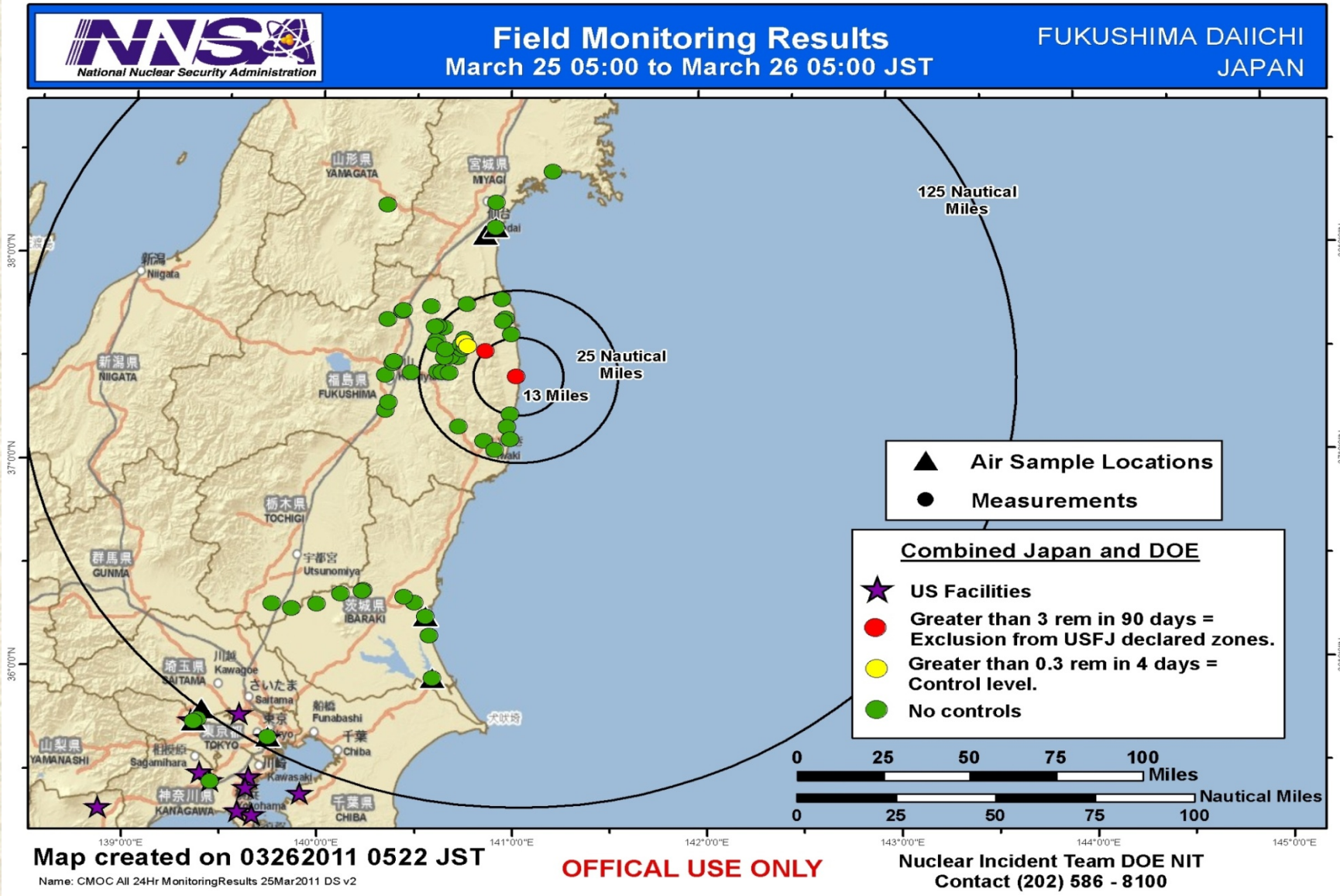
Interesting Coincidences

- **NR is mostly concerned about occupational effect of radiation**
  - In confined spaces
  - Detecting and mitigating very low exposure rates over a sailor's 20+ year career
- **Understandably NR's point of view and input carried great sway with decision-makers at all levels**
- **BUT Fukushima releases covered the entire Kanto Plain and beyond**
  - Environmental exposure
  - Houses and buildings shielded a good deal of radiation from residents
  - Brief exposure of a relatively short duration

Setting the Zones - GOJ



Setting the Zones – GOJ/DOD Disparities



Why did zone settings matter?

- **National level: Opens up discussion about why GOJ and USG have different zones**
  - Does one gov't know something the other doesn't?
  - Does one gov't know something it doesn't want to say publically?
  - Appears to be disparate treatment of citizens
- **Theater level: PACOM ordered issuance of Potassium Iodine (KI) and monitor radiation exposure with dosimeters**
- **Inside the DOD Warm Zones**
  - Tokyo/US Embassy
  - Narita Airport
  - Hardy Barracks
  - New Sanno Hotel

Partial Catalyst for AVD

- **Yokosuka Navy Base is 200 south of Fukushima with Tokyo in between**
- **Prevailing winds at Fukushima are from the west but on 15 March, slightly elevated radiation levels were recorded at Yokosuka**
  - 1.5 millirems and then 20 millirems
    - Mammogram = 30 millirems
    - CT scan – 1,100 millirems
- **Residents were warned to stay inside**
  - Letter
  - Email
  - Cones set up
  - Guards at the gates wearing surgical masks
  - Loudspeaker broadcast at NAF Atsugi
- **17 March, Authorized Voluntary Departure by DOS (9,500 left)**
- **21 March, GW gets underway from Yokosuka**

What did DOD Attorneys Do for AVD?

- AVD involved spending $ quickly and entitlements so many fiscal law issues
- DOD/DoS eventually expanded safehavens beyond US, requiring SecDef authority
- Helped craft accurate public messaging for affected personnel and commanders
- Focused on US personnel

Humanitarian Assistance/Disaster Assistance (HA/DR)

- **Civil assistance to a host nation (HN) following catastrophic event in the HN**
- **3D MARDIV (MajGen Brilakis) from Okinawa designated as JFLCC for HA/DR mission**
  - All equipment and gear arrived from Okinawa and needed to get back to Okinawa when finished
- **Sendei is 80 miles north of Fukushima**
  - Airport is a key transportation hub
- **About 500 Marines worked for 3 weeks to clear debris in Sendei**
- **JFLCC radiation monitoring of equipment indicated elevated levels**
  - HUMVEES and Sea Knight helicopters
- **Concern was that civilian government of Okinawa would bar returned to the island of equipment contaminated on Honshu**

JOINT TASK FORCE CIVIL SUPPORT

TOMODACHI (HA/DR) BY THE NUMBERS

Relief Support Delivered by U.S. Forces		
Commodity	**DOD supplies**	**GoJ, JSDF, NGO supplies**
Food	189 tons	57 tons
Water	2.0 million gallons	112,536 gallons
Relief Materials	87 tons	192 tons

Forces/Equipment	Component (Quantity)	Total
Personnel	JSF HQ (918) JFLCC (685) JFACC (7,069) JFMCC (15,684) JFSOCC (182)	24,538
Ships	JFMCC (24)	24
Aircraft	JFLCC (12) JFACC (28) JFMCC (142) JFSOCC (7)	189
Aircraft (sorties/flight hrs)	JFLCC (827/1,356) JFACC (456/707) JFMCC (493/1,369) JFSOCC (161/245)	1,937/3,677
ISR (sorties/flight hrs)	Global Hawk (18/430) WC-135 (7/98) AMS (58/295)	83/823
Vehicles	JFLCC (39) JFACC (67) JFMCC (16)	122

Over 28 days, more than 24,000 personnel, 24 ships, and 189 aircraft augmented Japan's disaster relief efforts.

What did DOD Attorneys Do for HA/DR?

- HA/DR involves expenditure of $ so many fiscal law issues
- HA/DR operations were pretty straight forward and did not require a lot of legal advice
- Focused on assisting GOJ and Japanese Self Defense Force (JSDF) in response operations

Radiation Primer

- **Radioactive decay is the process by which an atomic nucleus of an unstable atom loses energy by emitting ionizing particles (ionizing radiation)**
- **Release of radionuclides into the atmosphere from damaged reactors, either by water discharges/leaks or gas vapors**
  - **Iodine 131 (8 days)**
  - Cesium 134 (2 years)
  - **Cesium 137 (30 years)**
- **Must distinguish between**
  - **Rate of exposure**
  - **Total dose exposure**
- **For personnel, the greatest danger is inhalation & ingestion**
- **For equipment and gear, radiation accumulates in collectors**
  - **Air filters**
  - **Leading edges of rotary blades**
  - **Dirt & dust in wheel wells of vehicles**

How to measure radiation

- **Establish the background radiation level**
- **Establish the radioactive level being emitted by the source**
- **Subtract background from source reading**

- **Solid surfaces**
  - Radiacs, Geigers counters
  - Field labs
- **Liquids**
  - Must undergo expensive lab tests
  - Few Japanese labs and they were overwhelmed
  - Had to send outside Japan

Radiation Exposure

Exposure Received (mRem)		
Average Background Radiation *for 1 hour*	0.071	NCRP Report No.160, 2009
A *single* cross country flight	4	
New York to Tokyo polar flight route	9	
A *single* chest x-ray	10	Mettler, FA, et al, *Effective Doses in Radiological and Diagnostic Medicine, 2008*
Average background radiation *annually*	620	NCRP Report No.160, 2009
A *single* mammogram study	400	Mettler, FA
A *single* CT scan	1,800	Mettler, FA
Chernobyl evacuation zone	10,000	
Hiroshima survivor inside structure	78,000	
Nagasaki survivor inside structure	156,000	

Radiation Primer

- **USS Ronald Reagan (CVN 76) and the GW were finding radiation but relatively easy to do a wash down at sea**
- **As JFLCC surveys were finding elevated levels of radiation on helos and HUMVEES and HA/DR operations were winding down, the hourly chorus at JSF became**

WHEN IS CLEAN, CLEAN?

Legally, the analysis of that question is

1. **What standard do you apply? USG? GOJ? International? DOD? If DOD, which service?**
   - All US standards were significantly more restrictive than any GOJ standard
2. **Why did you choose the one you did? Required or policy decision?**

What did DOD Attorneys Do for FCM Operations?

- Served on Joint Validation Review Board (JVRB) to vet materiel and services provided to GOJ
  - Unmanned helo from industry
  - Barges (2 x 250k gal)
  - Water pumps ($6M)
  - Google mapping service
- Ensured appropriate use of Overseas Humanitarian Disaster Assistance and Civic Aid (OHDACA) funds
  - For host nation assistance
  - BUT a lot was being expended for DOD health force protection
  - Requires validation by DoS
    - BUT DoS Team left Embassy on 30 March

What did DOD Attorneys Do for FCM Operations?

- **Identification of standards**
- **Personnel Protection**
  - Establishment of control limits
  - Establishment of zones
- **Decontamination Standards**
  - Personnel
  - Equipment
  - Continued operations
  - Redeployment
- **Waste**
  - DoD policy on LLRW
  - Exceptions
  - Responsibility for disposal
  - Host nation involvement

Decontamination of Personnel/Equipment

- **JFLCC (2nd MARDIV) was performing traditional HA/DR in Sendei, ~80 km north of Fukushima; equipment was contaminated**
- **Ready to begin retrograding equipment back to Okinawa through Atsugi**
- **Political concerns about OK government blocking retrograde of USMC equipment from Honshu to OK**
- **Service have the TTPs to perform decontamination but lacked standards to determine when equipment could be retrograded off Honshu**
  - FM 3-11.3/MCWP 3-37.2A/NTTP 3-11.25/AFTTP(I) 3-2.56/02FEB06, MULTISERVICE TACTICS, TECHNIQUES, AND PROCEDURES FOR CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR CONTAMINATION AVOIDANCE

Decontamination of Personnel/Equipment

- **Always view radiation threat through occupational health lens**
- **Must understand/appreciate difference between fixed and loose contamination as a health threat**
  - Concern is inhalation threat to personnel engaged in decon ops
- **JSF J3 had a table choked with standards but no idea which one to choose**
- **On 1 April in USFJ JOC, CAPT Fred Capria and CAPT Shaw cracked the nut**

Decontamination of Personnel/Equipment

- **011211Z Apr 11 - JOINT SUPPORT FORCE GUIDANCE FOR SCREENING AND DECONTAMINATION OF EQUIPMENT AND PERSONNEL OPERATING ISO OPERATION TOMODACHI**
- **Initial JSF msg dealt only with decontamination of personnel/equipment leaving Honshu**
- **Directed components to capture and hold all decontamination process byproducts**
  - **Rags/wipes**
  - **Waste water**

Decontamination of Personnel/Equipment

- **DoDI 6055.08, Occupational Ionizing Radiation Protection Program**

- **"e. To the fullest extent practical, implement the safety and occupational health portions of Nuclear Regulatory Commission Regulation (NUREG)-1575, Revision 1 (Reference (o)); NUREG-1575, Supplement 1 (Reference (p)); and NUREG-1576 (Reference (q)) when decontaminating or decommissioning installations, facilities, and equipment."**

Decontamination of Personnel/Equipment

- **NUREG-1575, Revision 1 – Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)**

- **NUREG-1575, Supplement 1 – Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual (MARSAME)**
  - Appendix E. DISPOSITION CRITERIA - Disposition criteria specified by DOE regulations and orders are found in the Code of Federal Regulations, Title 10 (especially 10 CFR 835, Occupational Radiation Protection) and in applicable DOE Orders (especially DOE Order 5400.5, Radiation Protection of the Public and the Environment).

- **NUREG-1576 – Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP)**

Table E.2 Figure IV-1, from DOE Order 5400.5, as Supplemented in November, 1995 Memorandum: Surface Activity Guidelines – Allowable Total Residual Surface Activity (dpm/100 cm^2)[1]

Radionuclides[2]	Average[3,4]	Maximum[4,5]	Removable[4,6]
Group 4 - Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above[7]	5,000	15,000	1,000

[6] The amount of removable material per 100 cm^2 of surface area should be determined by wiping an area of that size with dry filter or soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wiping with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 cm^2 is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped. It is not necessary to use wiping techniques to measure removable contamination levels if direct scan surveys indicate that the total residual surface contamination levels are within the limits for removable contamination.

Further use and refinement of the decontamination standard

- **Installations appropriated the standards for entry**
  - Misawa used the standard at least 3 different ways in a 48 hour period for commercial vehicles that had traveled through Kanto Plain
  - Surveyed the vehicles for radiation levels then
    1. Refused entry to the vehicle
    2. Offloaded cargo onto a “clean” vehicle outside the gate
    3. Directed vehicle to wash down off installation then permitted entry
  - Attorneys then got engaged in reviewing/revising contracts
- **Aircraft were permitted to survey at the end of each day vice end of each sortie**

Disposal of Low Level Radioactive Waste (LLRW)

- **DoD 4715.6-R requires all LLRW be disposed of through the DOD Executive Agent (Army – Rock Island, IL)**
  - Approve waivers for disposal of LLRW outside the DoD program
- **Establishes the DoD LLRW Disposition Advisory Committee (LLRWDAC) to review performance and policy issues of the DoD LLRW disposal program**
- **Historically, DoD In Japan has very little LLRW**
  - Shipped to Korea for aggregation and trans-shipment to US
- **LLRWDAC began drafting a waiver to permit disposal of LLRW in waste streams of Japan**
  - Leave all LLRW in the hot zone
  - Maximize use of JSDF facilities
  - View as GOJ problem
- **DOD was doing no harm to the environment, certainly no worse than Japanese**

Disposal of Low Level Radioactive Waste (LLRW)

- **Dale Sonnenberg and CAPT Shaw drafted amendments to the Japanese Environmental Governing Standards (JEGS)**
  - USFJ decided NOT to proceed unilaterally
- **Japanese attorneys found a Japanese law that required TEPCO to receive and dispose of all radioactive waste**
- **DOD is still working with GOJ to clarify TEPCO's responsibility to receive LLRW waste**
  - I-131 was untraceable within 45 days
  - DOD has disposed of liquid waste
- **Ed Bloom did the heavy lifting on liquid disposal**
- **No nice neat equivalent to NUREG decontamination standard on disposal of radioactive contaminated liquids in US law or regulations**
  - EPA regs are designed for nuclear power plants operators

The Way Ahead

- The background radiation level for Honshu is elevated
- DOD installations have established monitoring regimes for personnel and facilities
- Some equipment has been permanently damaged beyond repair

The Way Ahead

- **16 December 2011, USD(P) published Policy Memo – Radiological Clearance Criteria Guidelines for Platforms and Materiel**
- **Rather than NUREG/DOE table, adopted American National Standards Institute /Health Physics Society (ANSI/HPS) N13.12-1999 (R2010), Surface and Volume Radioactivity Standards for Clearance**
  - Increased levels beyond JSF levels
    - Allows for ease of clearance

The Way Ahead

- **USFJ has strengthened many GOJ ministerial level relationships**
- **USG-GOJ alliance has been strengthened**

An Enduring Alliance