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Nuclear Decommissioning Authority



Global Support for Fukushima Decontamination and Decommissioning and Clean-up Efforts

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NDA mission

- UK Government organisation formed in 2005
- Delivering the largest and most important environmental clean-up programme in Europe
 - £117bn (~\$150bn) over 120 years
- Cleaning-up 17 existing nuclear sites and safely managing all radioactive and non-radioactive waste products
- Retrieving, making safe and disposing of some of the most hazardous material in the world
- Developing the UK's waste management infrastructure to reduce the risks to this and future generations
- We own the largest industrial complex in Britain at Sellafield in West Cumbria
- We control expenditure of approx £3bn (~\$4bn) per year and pay the wages of around 16,000 employees vital to the UK economy and nuclear skills base



UK-Japan History



1600

- First Briton – William Adams - arrives in Japan!

1613

- Trading relations established

1858

- British Diplomatic Mission established

1966

- Tokai 1 Magnox reactor start up

1970s

- THORP built with Japanese utility finance to reprocess LWR fuel
- Spent fuel transported from Japan to UK for reprocessing

1990s

- THORP Commissioned
- UK Nuclear Office established in Tokyo (now INS Japan)

2010

- First return of vitrified HLW to Japan from UK

UK-Japan Decommissioning and Clean-up Collaboration 2011 - 2017

2011

- March: The accident
- May – June: IAEA Mission led by UK's Mike Weightman
- October: UK Embassy hosts "Beyond Cold Shutdown" symposium

2012

- April: UK-Japan Civil Nuclear Cooperation Agreement: Establishes annual Nuclear Dialogue meetings
- June: NDA & Sellafield visit TEPCO
- Winter: Nuclear R&D event - UK Suppliers visit Japan /TEPCO delegation visits the UK

2013

- Many more exchange visits, dialogues and workshops

2014

- September: TEPCO-Sellafield co-operation agreement signed

2015

- February: NDA-NDF co-operation agreement signed

2016

- Dialogue continues
- UK Japan Nuclear Industry Forum (inc. new build) agreement signed

2017

- UK trade mission to Japan covering decommissioning and new build
- Attended by over 100 Japanese & UK companies
- Supported by both Trade Associations (NIA and JAIF)
- Japanese utilities tour of UK nuclear decommissioning sites



Areas of specific support

Sellafield – TEPCO collaboration

- Site management
- Environmental management
- Radiation protection
- Project management
- Design engineering
- Stakeholder engagement

NDA-NDF

- Stakeholder dialogue
- Strategy development
- Regulatory approach
- Integrated waste management
- Organisational structure
- Introduction of UK institutional system

NDA-IRID

- International Expert Group

INS & UK Embassy

- Support to Japan and promoting greater understanding of UK expertise
- Support to UK companies providing decommissioning services

NNL

- NNL & Collaborative Laboratories for Advanced Decommissioning Science (CLADS)
- Hot labs

ONR-NRA

- Emergency planning
- Enabling Regulation

Health Protection Agency

- Post-accident contamination level advice



Returning to normality

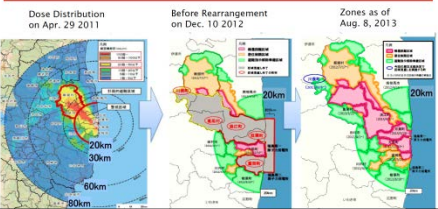
- **Evacuation based on dose rates (20mSv/y)**
 - 81,000 evacuees (METI)
 - Many cases of evacuation stress & transfer trauma
 - After plant stabilization these outweighed the radiological hazards of returning
 - Levels in most evacuated areas not greater than the natural background



- **October 2012**
 - ~1000 disaster-related deaths (Reconstruction Agency)
 - Not radiation-induced or earthquake or tsunami related
 - Similar number among evacuees from tsunami and earthquake affected prefectures

Rearrangement of Evacuation Zones

Depending on dose rate, zones are rearranged for return
 "Areas where it is expected that the residents have difficulties in returning for a long time", "Areas in which the residents are not permitted to live", "Areas to which evacuation orders are ready to be lifted"



- **2013**
 - “Radiation exposure following the nuclear accident at Fukushima Daiichi did not cause any immediate health effects. It is unlikely to be able to attribute any health effects in the future among the general public and the vast majority of workers.” UNSCEAR

NUCLEAR MELTDOWN DOES NOT STOP PLAY

...the world's second biggest...

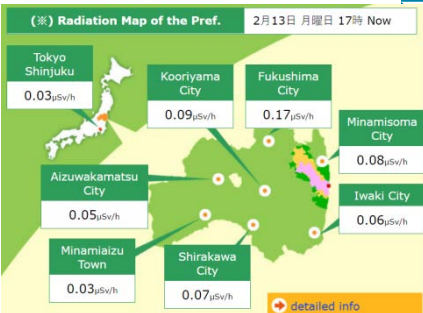
World's second biggest...

...the world's second biggest...

...the world's second biggest...

- **Was evacuation worth it?**
 - Would it have been undertaken if all health impacts assessed?
 - Chernobyl also demonstrates onset of “compensation culture”

Fukushima Prefecture: The road to recovery



The vision for revitalization of Fukushima Prefecture



"I will go forward with residents and municipalities hand in hand to revive 'FUKUSHIMA', which is widely known to the world due to the nuclear accident, to "A new Fukushima" in which we can take pride to the world.

Yuhei Sato, July 2011
Governor, Fukushima Prefecture 2006-14



"The dark days are becoming brighter and the outlook is becoming more positive. Our aim is to create a "New Fukushima" filled once again with happiness and hope. That is our firm commitment."

Masao Uchibori, October 2016
Governor, Fukushima Prefecture 2014 -



2016: Tourism back to pre-accident levels *Trip Advisor*

Conclusion

- UK & Japan have a long history & cultural understanding
- UK & Japan have a long nuclear history
- Fukushima Daiichi accident highly complex
 - Would test any nation
 - Successfully transitioning from emergency to recovery and looking forward to a new future
 - Confident Japan can do this on its own, but the global nuclear family is working to support its mission
 - UK stance has been to act as a trusted friend and offer advice when it has been sought
 - UK specialist companies working at Fukushima Daiichi
 - Createc, Oxford Technologies, AMECFW, James Fisher Nuclear, Cavendish



British Embassy
Tokyo



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