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From: David McIntyre *PA*
To: Eliot Brenner
Date: 9/23/04 4:53PM
Subject: asahi shimbun talking points on materials

Eliot -
Following our toffee bash for your birthday, Scott handed me a list of questions apparently from the Asahi folks, informing me I was to prepare talking points on the materials security questions. Attached are my mostly off-the-top-of-my-head, sugar-fueled musings. I'll leave a print out on your chair, along with the DOE press releases referenced.

Dave

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- Talking points prepared by Dave McIntyre, 9/23/04, for Eliot Brenner for interview with Asahi Shimbun. (Revision 1)

Regarding missing and stolen materials:

1). Most of the "missing or stolen" nuclear materials are portable gauges widely used in industry to measure density and moisture content of soil, concrete and other materials.

- ▶ There are approximately 22,000 to 25,000 such devices in use in the United States.
- ▶ The NRC receives approximately 50 reports each year of lost or stolen gauges. Less than half of these are subsequently reported as recovered.
- ▶ The NRC is finalizing new regulations to toughen security measures for these devices. (Require at least two physical controls to deter or prevent theft.)
- ▶ **These missing gauges are not considered a security threat.**
 - ▶ They contain small amounts of radioactivity. (Typically 8-10 millicuries of cesium-137 and 40-50 mCi of americium-141/beryllium.)
 - ▶ The sources are encapsulated in stainless steel, and thus difficult to get to.
 - ▶ There is no pattern to these thefts to suggest that terrorists are trying to collect these devices for construction of a "dirty bomb."

2). You may have seen reports of missing "spent fuel rods" at two of our nuclear plants this year.

- ▶ **FRAGMENTS** of spent fuel rods were reported missing from the spent fuel pools at the Vermont Yankee plant and at the decommissioned Humboldt Bay plant (California).
- ▶ The Vermont Yankee fragments were subsequently accounted for. A search of the pool discovered an additional container that had been overlooked, and the licensee determined that this container held the missing fragments.
- ▶ The Humboldt Bay fragments remain unaccounted for.
- ▶ Two complete fuel rods were reported missing from the Millstone plant (Connecticut) in 2000. They have not been definitively accounted for, but the NRC believes they were mistakenly shipped to a low-level waste dump.
- ▶ **These missing materials are considered an accountability problem, not a security issue.**
 - ▶ The pieces are difficult to handle, and any attempt to remove them from a nuclear plant would have triggered radiation alarms.
 - ▶ The Humboldt Bay fragments are most likely still in the spent fuel pool. If not, they may have been shipped to a low-level waste dump or other facility for testing or reprocessing. But this shipment would have used proper shielding to protect the public.

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3). The NRC and other federal agencies are working to improve security and accountability of high-risk radioactive sources. This effort was underway even before 9/11/01, but intensified greatly following the terrorist attacks given the new security environment.

▶ The NRC assists the Department of Energy in its effort to recover unused or unwanted radioactive sources. According to a May 18, 2004, (DOE) press release, the DOE recovered more than 5,000 radioactive sources over an 18-month period as part of this effort.

▶ Most of these are NOT "lost, stolen or missing"; rather, the vast majority are sources that are no longer used or wanted by the licensee and are recovered as a precaution out of public health and safety concerns, as well as security concerns.

▶ Four high-risk strontium-90 RTGs (radioisotopic thermal generators) were recovered in the Houston area early this year. These were the largest sources recovered to date. (DOE press release, 5/18/04)

▶ In spring 2004, more than 500 radioactive sources were recovered from a bankrupt Pennsylvania company. (DOE press release, 5/18/04)

▶ The NRC, with cooperation from state governments, has completed an interim database of high-risk sources in the United States. This will be used to develop a permanent tracking system to improve the accountability of

▶ The NRC has issued orders mandating tougher security measures by licensees of irradiators, as well as manufacturers and distributors of devices containing radioactive materials.

▶ The NRC, along with DOE and the State Department, have worked with the International Atomic Energy Agency to improve the security and accountability of high-risk radioactive sources worldwide. (IAEA "Code of Conduct on Safety and Security of Radioactive Materials")

▶ As part of this effort, the NRC has just published a proposed rule to tighten licensing requirements for the export or import of high-risk radioactive materials.

▶ **Unfortunately, the accountability of such materials around the world is less rigorous than in the United States. Therefore, efforts to prevent terrorists from accumulating enough material to construct a "dirty bomb" or other radiological device are appropriately focused on securing radioactive materials overseas. (See DOE press release of 9/13/04 on recovery of highly enriched uranium from Uzbekistan.)**

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