

The Nuclear Materials Management and Safeguards System (NMMSS)



2015 Annual Users Training Meeting

Accuracy

Accountability

Performance



May 11-14, 2015

Las Vegas, NV

Feedback from others

Brian Horn, Nuclear Regulatory Commission
Pete Dessauls, Department of Energy, National Nuclear Security Administration



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Feedback from others



- Recent routine interactions with representatives of
 - International Atomic Energy Agency
 - Australia
 - Canada
 - European Commission
 - Japan
 - Taiwan

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How industry reports an export



- Example #1, the export of fuel assemblies

Number of Lines	License Number	Header Gross Weight	Line Number	Batch Number	Number of Items	Comp Code	IAEA Comp Code	Element Weight	Material Type	Isotope Weight	Isotope Weight Percent
4	XSNM-1	6000	1	X17	1	309	BB2F	390000	EG	18915	4.8500
4	XSNM-1	6000	2	X17	1	309	BB2F	32000	EG	710	2.2200
4	XSNM-1	6000	3	X18	1	309	BB2F	31500	EG	699	2.2200
4	XSNM-1	6000	4	X18	1	309	BB2F	390500	EG	19355	4.9000

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How industry reports an export



■ Example # 2, export of fuel assembly

Number of Lines	License Number	Header Gross Weight	Line Number	Batch Number	Number of Items	Comp Code	IAEA Comp Code	Element Weight	Material Type	Isotope Weight	Isotope Weight Percent
6	XSNM-2	2015	1	15CFL	1	309	BB2F	7000	EG	140	2.0000
6	XSNM-2	2015	2	15CFL	1	309	BB2F	12000	EG	396	3.3000
6	XSNM-2	2015	3	15CFL	1	309	BB2F	6000	EG	282	4.7000
6	XSNM-2	2015	4	15CFL	1	309	BB2F	44000	EG	1804	4.1000
6	XSNM-2	2015	5	15CFL	1	309	BB2F	20000	EG	146	0.7300
6	XSNM-2	2015	6	15CFL	1	309	BB2F	10000	EG	400	4.0000



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How industry reports an export



- Example #3, the export of fuel assemblies

Number of Lines	License Number	Header Gross Weight	Line Number	Batch Number	Number of Items	Comp Code	IAEA Comp Code	Element Weight	Material Type	Isotope Weight	Isotope Weight Percent
4	XSNM-3	4500	1	UT-10	1	309	BB2F	400000	EG	19400	4.8500
4	XSNM-3	4500	2	UT-11	1	309	BB2F	400200	EG	19414	4.8510
4	XSNM-3	4500	3	UT-12	1	309	BB2F	400150	EG	19409	4.8505
4	XSNM-3	4500	4	UT-13	1	309	BB2F	400050	EG	19602	4.9000

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How industry reports an export



■ Example # 4, export of fuel rods

Number of Lines	License Number	Header Gross Weight	Line Number	Batch Number	Number of Items	Comp Code	IAEA Comp Code	Element Weight	Material Type	Isotope Weight	Isotope Weight Percent
2	XSNM-4	1000	1	Box-1	52	291	DV2F	200000	EU	8884	4.4420
2	XSNM-4	1000	2	Box-1	52	291	DV2F	150000	EU	3818	2.5450

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IAEA Transit matching, example #1



■ Country “K”

- Reported to the IAEA the receipt of 24 grams of Plutonium shipped from the U.S.
- IAEA reviewed U.S. export notifications
- IAEA notified U.S. that they could not match the U.S. shipment record with Country “K” receipt record
- U.S. actions
 - Directed NMMSS to check database
 - NMMSS found no record
 - U.S. asked Country “K” for more information
 - Received company name
 - The rest of the story



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IAEA Transit matching, example #2



■ Country “Y”

- Reported to the IAEA the receipt of 80 fuel assemblies shipped from the U.S.
- IAEA reviewed U.S. export notifications
- IAEA notified U.S. that they could not match the U.S. shipment record with Country “Y” receipt record
- U.S. actions
 - Directed NMMSS to check database
 - NMMSS found the following information by matching shipper, receiver, shipping data and quantity of nuclear material shipped



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Export reported to NMMSS



■ Export of fuel assemblies

Number of Lines	License Number	Header Gross Weight	Line Number	Batch Number	Number of Items	Comp Code	IAEA Comp Code	Element Weight	Material Type	Isotope Weight	Isotope Weight Percent
7	XSNM-2	64000	1	M2015	80	309	BB2F	1500000	EG	45000	3.0000
7	XSNM-2	64000	2	M2015	80	309	BB2F	2500000	EG	100000	4.0000
7	XSNM-2	64000	3	M2015	80	309	BB2F	2060000	EG	14600	0.7300
7	XSNM-2	64000	4	M2015	80	309	BB2F	800000	EG	12000	1.5000
7	XSNM-2	64000	5	M2015	80	309	BB2F	1250000	EG	62375	4.9900
7	XSNM-2	64000	6	M2015	80	309	BB2F	2500000	EG	102500	4.1000
7	XSNM-2	64000	7	M2015	80	309	BB2F	5000000	EG	200000	4.0000



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What was learned



- U.S. shipper used a “contract number” as the Batch ID on the 741
- U.S. reported one “Batch ID” to IAEA based on information shipper provided NMMSS
- IAEA trying to match 80 fuel assembly “Batch ID’s” reported by Country “Y”



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Why



- Why might the U.S. shipper have used a “contract number” as the Batch ID on the 741?
 - Have internal contact number documented on the 741
 - Simplify reporting, (seven lines of data reported versus 80+ lines if each fuel assembly Batch ID was reported)
 - Reporting possibly requested by Country “Y” customer

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Reminder



- Facilities selected by the IAEA:
 - URENCO USA, (Enrichment)
 - Westinghouse (LEU fuel fabrication)
 - Global Nuclear Fuels, (LEU fuel fabrication)
 - Areava, NP (LEU fuel fabrication)
- Your Transitional Facility Attachment requires “Batch ID” to be reported for each item shipped from your plants (e.g., each fuel assembly is an item)

