

Advanced Welding and Joining Technical Workshop



Pipeline & Hazardous Materials Safety Administration

Office of Pipeline Safety

Research & Development Program



Good Morning & Welcome!



Welding & Joining

Why so important?

- Provides the critical integrity link between pipe sections
- Prescriptive and Performance based regulations promulgated to address it
- Requires knowledge and expertise to get it right
- Controversial public perception with the TAPS aftermath



Welding & Joining

Present challenges

- Reducing failure rates
- Mitigate inducing more damage during construction
- Reduce construction times by improving/expediting the process
- Construction in harsh environments: Arctic or Offshore
- Inspection and validation of integrity



Welding & Joining

Future challenges

- Expanding mileage
- Reducing failures
- Inspection and validation of integrity
- Changing materials: high strength steels, PE, PA, ?
- Outdated or no standards
- Transferring knowledge and re-certification



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How will this event help?

- Better synergize efforts
- Identify mutual goals
- Provide list of actions for regulators, operators, standard organizations and researchers to reach identified goals
- Set a collaborative momentum toward these goals



PHMSA Pipeline Safety R&D

Existing welding portfolio

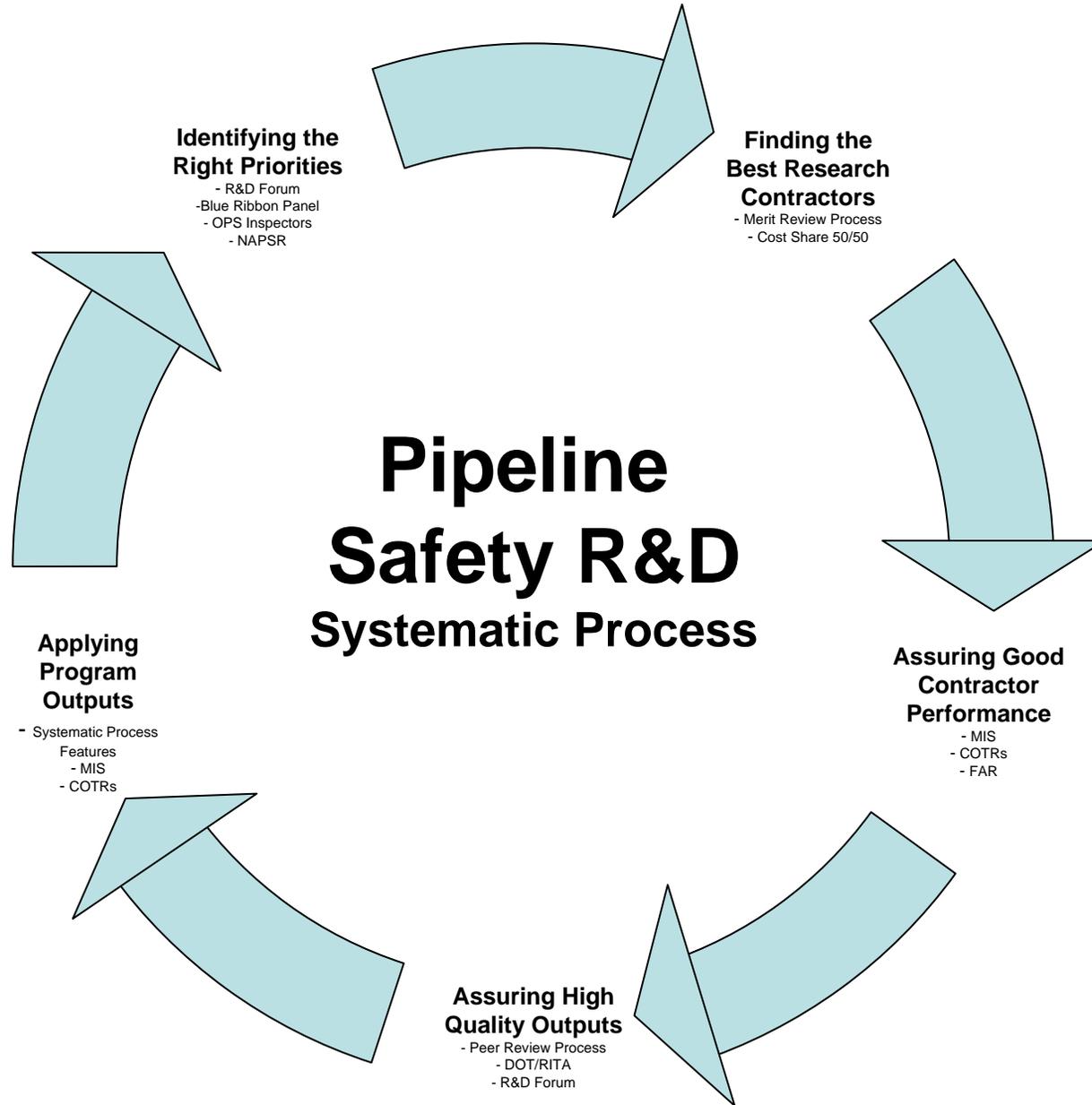
No.	Contractor	Project Title	PHMSA	Co-Share	Pct Cmpl
1	Edison Welding Institute, Inc.	"Improved Inspection and Assessment Methods for Pipeline Girth Welds and Repair Welds"	\$349,900	\$460,000	100
2	BMT Fleet Technology Limited	"Validation of Sleeve Weld Integrity and Workmanship Limit Development"	\$45,000	\$93,550	100
3	Engineering Mechanics Corporation of Columbus	"A Comprehensive Update in the Evaluation of Pipelines Weld Defects"	\$361,419	\$544,405	92
4	Edison Welding Institute, Inc.	"Innovative Welding Processes for Small to Medium Diameter Gas Transmission Pipelines"	\$399,989	\$700,000	81
5	BMT Fleet Technology Limited	"Mechanical Damage at Welds"	\$80,000	\$149,997	78
6	BMT Fleet Technology Limited	"Alternate Welding Processes for In-service Welding"	\$181,000	\$422,300	71
7	Edison Welding Institute, Inc.	"Advanced Welding Repair and Remediation Methods for In-service Pipelines"	\$409,673	\$450,000	71
8	Engineering Mechanics Corporation of Columbus	"First Major Improvements to the Two-curve Fracture Arrest Model"	\$615,028	\$4,263,976	68
9	Edison Welding Institute, Inc.	"Strain-Based Design of Pipelines - Phase II"	\$74,881	\$224,881	65
10	Edison Welding Institute, Inc.	"Evaluation of Hydrogen Cracking in Weld Metal Deposited using Cellulosic Electrodes"	\$149,968	\$150,000	64
11	Edison Welding Institute, Inc.	"Optimizing Weld Integrity for X80 and X100 Linepipe"	\$303,956	\$587,000	64
Totals:			\$2,970,814	\$8,046,109	78



PHMSA Pipeline Safety R&D

Future initiatives

- New awards from last R&D solicitation
- Addressing program results to “End Users”
- Mechanical Damage Technical Workshop – Houston, TX
February 28 & March 1, 2006
- Future R&D solicitations





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