



August 11, 2026 | Oak Ridge, TN

# MRA Acquisition Strategy

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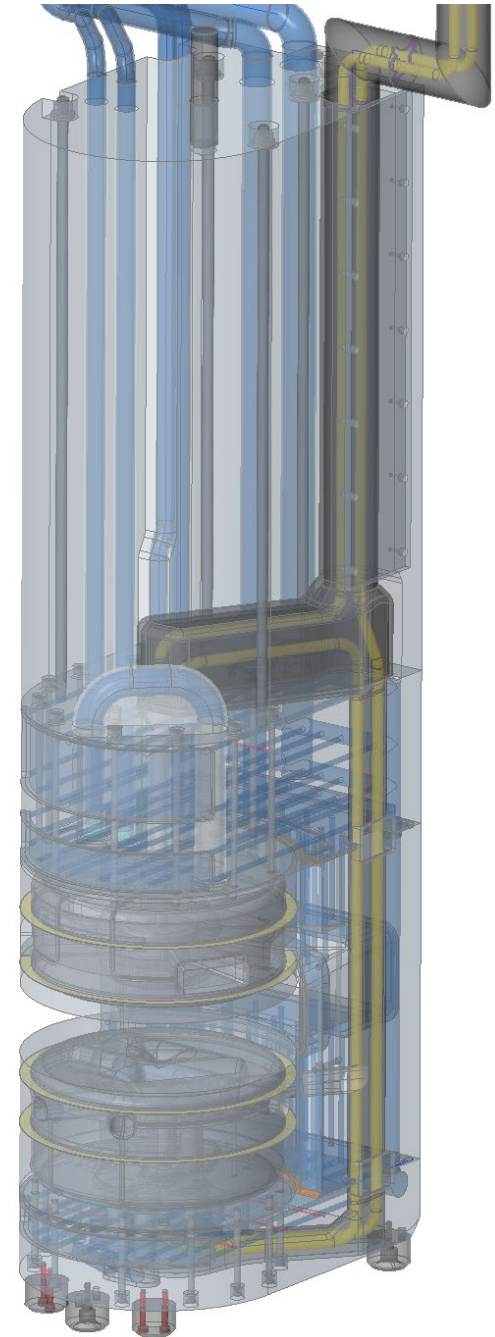
U.S. DEPARTMENT  
of **ENERGY**

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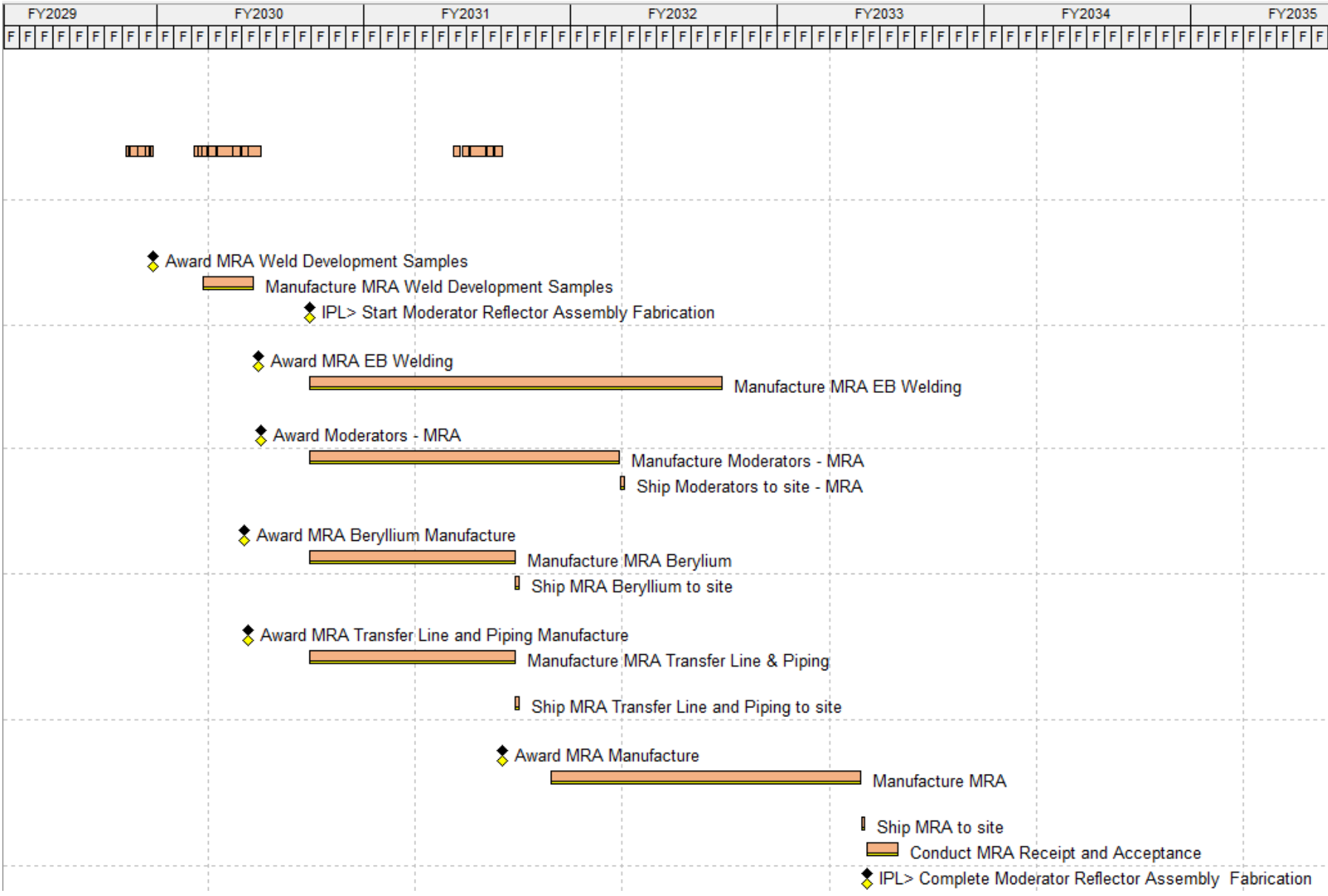


# MRA Procurement Overview

- Total Fabrication Time of 3.5 years
  - Starts in September 2029
  - Finishes May 2033
  - Start is funding limited
- Total Fabrication Cost of \$4.7 million
  - All procurement costs supported by vendor estimates
  - Additional \$0.9 million oversight cost
- Fabrication split into 6 procurements
- Total schedule float of 16 days



# MRA Procurement Schedule



# MRA Procurement Details

| Activity ID | Activity Name                                                     | RD   | Start       | Finish    | TF  | Budgeted Material Cost | Budgeted Total Cost |
|-------------|-------------------------------------------------------------------|------|-------------|-----------|-----|------------------------|---------------------|
| ▢           | <b>Moderator Reflector Assembly (MRA)</b>                         | 1693 | 02-Feb-26 A | 02-May-33 | 129 | \$4,742,284.70         | \$5,938,970.99      |
| ▢           | <b>Moderator Reflector Assembly</b>                               | 1693 | 02-Feb-26 A | 02-May-33 | 129 | \$4,742,284.70         | \$5,938,970.99      |
| +           | <b>Final Design</b>                                               | 13   | 02-Feb-26 A | 19-Aug-26 | 802 | \$0.00                 | \$280,065.44        |
| +           | <b>Procurement Prep</b>                                           | 457  | 07-Aug-29   | 03-Jun-31 | 49  | \$0.00                 | \$55,363.98         |
| ▢           | <b>Procurement/Fabrication</b>                                    | 902  | 25-Sep-29   | 02-May-33 | 129 | \$4,742,284.70         | \$5,603,541.57      |
| ▢           | <b>Procurement</b>                                                | 902  | 25-Sep-29   | 02-May-33 | 129 | \$4,742,284.70         | \$5,603,541.57      |
| ▢           | <b>MRA Weld Development Samples</b>                               | 189  | 25-Sep-29   | 28-Jun-30 | 114 | \$52,775.62            | \$62,779.01         |
|             | TS8011210 Award MRA Weld Development Samples                      | 0    |             | 25-Sep-29 | 183 | \$0.00                 | \$0.00              |
|             | TS043524 Manufacture MRA Weld Development Samples                 | 60   | 21-Dec-29   | 20-Mar-30 | 183 | \$52,775.62            | \$62,779.01         |
|             | TS04IPL491 IPL> Start Moderator Reflector Assembly Fabrication    | 0    | 28-Jun-30   |           | 54  | \$0.00                 | \$0.00              |
| ▢           | <b>MRA EB Welding</b>                                             | 562  | 29-Mar-30   | 24-Jun-32 | 342 | \$95,626.90            | \$349,133.58        |
|             | TS162415 Award MRA EB Welding                                     | 0    |             | 29-Mar-30 | 344 | \$0.00                 | \$0.00              |
|             | TS043525 Manufacture MRA EB Welding                               | 500  | 28-Jun-30   | 24-Jun-32 | 342 | \$95,626.90            | \$349,133.58        |
| ▢           | <b>Moderator Procurement</b>                                      | 440  | 02-Apr-30   | 05-Jan-32 | 462 | \$1,580,767.25         | \$1,831,453.69      |
|             | TS162525 Award Moderators - MRA                                   | 0    |             | 02-Apr-30 | 54  | \$0.00                 | \$0.00              |
|             | TS043520 Manufacture Moderators - MRA                             | 375  | 28-Jun-30*  | 26-Dec-31 | 59  | \$1,580,767.25         | \$1,831,453.69      |
|             | TS162565 Ship Moderators to site - MRA                            | 5    | 29-Dec-31   | 05-Jan-32 | 462 | \$0.00                 | \$0.00              |
| ▢           | <b>MRA Beryllium Procurement</b>                                  | 335  | 05-Mar-30   | 03-Jul-31 | 54  | \$1,245,222.58         | \$1,286,555.77      |
|             | TS162725 Award MRA Beryllium Manufacture                          | 0    |             | 05-Mar-30 | 74  | \$0.00                 | \$0.00              |
|             | TS043521 Manufacture MRA Beryllium                                | 250  | 28-Jun-30   | 26-Jun-31 | 54  | \$1,245,222.58         | \$1,286,555.77      |
|             | TS162765 Ship MRA Beryllium to site                               | 5    | 27-Jun-31   | 03-Jul-31 | 54  | \$0.00                 | \$0.00              |
| ▢           | <b>MRA Transfer Line and Piping Procurement</b>                   | 330  | 12-Mar-30   | 03-Jul-31 | 474 | \$142,044.94           | \$183,378.13        |
|             | TS162825 Award MRA Transfer Line and Piping Manufacture           | 0    |             | 12-Mar-30 | 74  | \$0.00                 | \$0.00              |
|             | TS043522 Manufacture MRA Transfer Line & Piping                   | 250  | 28-Jun-30   | 26-Jun-31 | 59  | \$142,044.94           | \$183,378.13        |
|             | TS162865 Ship MRA Transfer Line and Piping to site                | 5    | 27-Jun-31   | 03-Jul-31 | 474 | \$0.00                 | \$0.00              |
| ▢           | <b>MRA Procurement</b>                                            | 480  | 03-Jun-31   | 02-May-33 | 129 | \$1,625,847.40         | \$1,890,241.40      |
|             | TS162625 Award MRA Manufacture                                    | 0    |             | 03-Jun-31 | 16  | \$0.00                 | \$0.00              |
|             | TS043528 Manufacture MRA                                          | 375  | 28-Aug-31   | 25-Feb-33 | 16  | \$1,625,847.40         | \$1,890,241.40      |
|             | TS162665 Ship MRA to site                                         | 5    | 28-Feb-33   | 04-Mar-33 | 16  | \$0.00                 | \$0.00              |
|             | TS043530 Conduct MRA Receipt and Acceptance                       | 40   | 07-Mar-33   | 02-May-33 | 16  | \$0.00                 | \$0.00              |
|             | TS04IPL540 IPL> Complete Moderator Reflector Assembly Fabrication | 0    |             | 07-Mar-33 | 169 | \$0.00                 | \$0.00              |

# MRA Procurement Types

- All MRA procurements will be build to print

| Procurement                  | Type                     |
|------------------------------|--------------------------|
| MRA Weld Development Samples | Competitive - Best Value |
| MRA EB Welding               | Sole Source              |
| Moderators                   | Competitive - Best Value |
| MRA Beryllium                | Sole Source              |
| MRA Transfer Line and Piping | Competitive - Best Value |
| MRA (Including Integration)  | Competitive - Best Value |

# MRA Procurement Vendor Requirements

| Procurement                  | Vendor Requirements                                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| MRA Weld Development Samples | High precision machining                                                                                                     |
| MRA EB Welding               | High voltage EB welding, EB weld development for low volume                                                                  |
| Moderators                   | High precision & complex machining, He leak checking, project management                                                     |
| MRA Beryllium                | Beryllium material production and machining (hazardous material)                                                             |
| MRA Transfer Line and Piping | Tube bending, tube welding, He leak checking, cryogenic experience preferred                                                 |
| MRA (Including Integration)  | High precision & complex machining, He leak checking, project management, precision assembly, cryogenic experience preferred |

# MRA Related Items in the STS Risk Registry

- Risk ID 030 – If a critical target system component (MRA, target, etc.) is damaged late in manufacturing, shipping, installation, then repair or replacement would be required resulting in additional costs and schedule.
- Ortho/Para Converter related risk has been retired
  - PPU project Ortho/Para converter implementation has successfully demonstrated required performance at prototypic STS conditions
- Additional fabrication/installation related risks will be evaluated for addition to STS Risk Registry
  - Limited vendor pool
  - Fabrication delays
  - Fabrication is unable to meet requirements

# Thank You

