UTA 16-645F3B Locomotive Engine Remanufacture

Analysis of Specification Compliance for RFP 17-2455JH

HIGHERPOWER

HPI-Ex 1

UTA Specification Language and MPI Interpretations

The following language was used within Specification 17-2455JH. Below are standard industry definitions of these terms.

Renew/Replace

1. Provide a new component or material that is identical to the existing component or material.
2. To replace with a new equivalent component (regardless of the condition of the part being renewed).

Repair – To correct specific damage to original condition or functionality.

Qualify- To inspect and test a used component or system.

Core- A used component that is in rebuildable condition.

UTEX- Unit Exchange service of a rebuilt component.

MPI interpretation- i.e.,"Renewed by repairing" illustrates MPI's own interpretation of standard industry procedures, which results in numerous technical exceptions within their proposal.

Condition of F3B engines

UTA locomotives were built in 2007

The engines were **1982 manufacture**, originating from BNSF and other Class 1 railroads with **significantly higher duty cycle**. Those that were bare block and pan, were made whole utilizing **miscellaneous parts** from excess 20-cylinder inventory (**1972 manufacture**).

Gears were mostly qualified and, wherever possible, Running Take Out cores were used. Crank shafts as well as camshafts were rebuilt, in addition to the rebuilding of the pumps and turbos.

UTA's specification was properly written to improve reliability at 40,000hrs MTBF (Mean Time Between Failure), addressing age of engines and components. **Renewal is critical** to meet UTA's expected 10-year life cycle.

The approach taken by MPI will not achieve reliability objective, with **significant failure rates** on repaired/requalified components, resulting in **long-term costs.**

Major Compliance Discrepancies

Examples

Spec Requirement: Scope of Work - Specific Requirements 3.3.C.
Exhaust chambers shall be cleaned and inspected. Cracked exhaust chambers shall be renewed.

HPI Compliance: HPI is in full compliance with renewal.

MPI Exception: MPI does not comply, repairing the cracked exhaust section instead of renewing.

Bottom Line Impact to UTA:
Premature failure resulting in excessive, unnecessary costs to UTA for unscheduled repairs and out-of-service time (loss of revenue).

Major Compliance Discrepancies

Examples

Spec Requirement: Scope of Work - Specific Requirements 3.4.A.
Inspect and qualify the accessory drive housing. If the housing is defective it shall be replaced with the new style (EMD 9531367).

HPI Compliance: HPI is in full compliance, replacing housings with new style if they do not qualify.

MPI Exception: MPI does not comply, repairing instead of replacing with new style.

Bottom Line Impact to UTA:
Premature failure resulting in excessive, unnecessary costs to UTA for unscheduled repairs and out-of-service time (loss of revenue).

Major Compliance Discrepancies

Examples

Spec Requirement: Scope of Work - Specific Requirements 3.4.E.
Apply new governor drive gear, accessory drive gear*, water pump gears and lube oil pump drive gears. Accessory gear assembly to be equipped with new springs and segments. *EMD X891195

HPI Compliance: HPI is in full compliance with renewal of gears.

MPI Exception: MPI does not comply, requalifying instead of renewing. Replacement of gears will require joint agreement change order.

Bottom Line Impact to UTA:
Premature failure resulting in excessive, unnecessary costs to UTA for unscheduled repairs and out-of-service time (loss of revenue).

Major Compliance Discrepancies

Examples

Spec Requirement: Scope of Work - Specific Requirements 3.8.A.
Camshafts shall be renewed with cam shaft segments supplied in the emission kit for the interface with the EFI injectors.

HPI Compliance: HPI is in full compliance with renewal.

MPI Exception: MPI does not comply, qualifying instead of renewing. Replacement of camshaft will require joint agreement change order.

Bottom Line Impact to UTA:
Premature failure resulting in excessive, unnecessary costs to UTA for unscheduled repairs and out-of-service time (loss of revenue).

Major Compliance Discrepancies

Examples

Spec Requirement: Scope of Work - Specific Requirements 3.5.H.
Recondition aftercooler air ducts and replace cores with emission kit components. Cracked air ducts shall be renewed.

HPI Compliance: HPI is in full compliance with replacement of the cracked air ducts as new.

MPI Exception: MPI does not comply, repairing instead of renewing.

Bottom Line Impact to UTA:
Premature failure resulting in excessive, unnecessary costs to UTA for unscheduled repairs and out-of-service time (loss of revenue).

Major Compliance Discrepancies

Examples

Spec Requirement: Scope of Work, General-H
UTA will perform the removal and the re-installation of the locomotive's components including the engine and main traction alternator at their Salt Lake City, Utah maintenance facility. All supplied on-board emission kit components, Tier 1+ or Tier 2+, will be installed at this same facility…

HPI Compliance: HPI is in full compliance with installation to be performed at SLC facility.

MPI Exception: MPI does not comply, proposing that unit is installed and tested in Boise.

Bottom Line Impact to UTA:
Significant increase in out-of-service time and delayed project schedule.

Tier 2+ Emissions Level Attainment

Review of MPI UTA approach to certification

This content has been pulled from MPI's proposal, pertaining to their approach to certification for this 16-645F3B rebuild and upgrade project.

MPI's Option 2 is simply repeating the Tier 1+ configuration (with Tier 2+ words added). The only difference is in specifying new (vs rebuilt) power assemblies and adding cam mod.

Nothing is added to address a 55% reduction in PM when moving from Tier 1+ to Tier 2+ (from 0.22 to 0.10 g/hp-hr).

IMPACT TO UTA: change order for DOC and delay to schedule

MPI's **Emission Testing and Implementation Plan** is described further in the last Section of this Tab 2 narrative. MPI has summarized the scope of work for each Option, in alignment with the UTA specification, as shown below. In addition to Option 1 and 2 proposals for EFI, MPI has included an "Option 3", as an alternative solution with Mechanical Injection.

For Option 1 (Base A), Certified EPA Tier 1+ EFI, MPI includes a Remanufactured Engine, with the following contents:

• Power Assemblies (UTEX) • QES-III Upgrade (CPU and Software) • EFI Controller and Power Supply • EFI Sensors, Wiring Harness and Securement • 4-Pass Aftercooler Cores (New) • Turbocharger (UTEX) • EFI Fuel Injectors (New)	• Mixing Valve • Water Pump Upgrade • Oil Cooler Modification & Piping • EPA Certificate (Tier 1+) • Label • Install & Maintenance Instructions • Registration Card • Installation of Engine and EFI Kit on Unit #1 in Boise

For Option 2 (Base B), Certified EPA Tier 1+ EFI with assembly and test using Tier 2+ Emissions Kit, MPI Includes a Remanufactured Engine, with the following contents:

• Power Assemblies (New; required to meet Tier 2+ emissions) • QES-III (CPU and Software) • EFI Controller and Power Supply • EFI Sensors, Wiring Harness and Securement • 4-Pass Aftercooler Cores (New) • Turbocharger (UTEX) • EFI Fuel Injectors (New) • Cam Modification	• Mixing Valve • Water Pump Upgrade • Oil Cooler Modification & Piping • EPA Certificate (Tier 1+) and Tier 2+ Test Data • Label • Install & Maintenance Instructions • Registration Card • Installation of Engine and EFI Kit on Unit #1 in Boise

Exceptions and Negotiations by MPI Prior to Award

The below excerpt from Mr. Biles' letter dated March 23, 2018, in response to HPI's letters of formal protest, references the right of UTA to conduct negotiations with the successful proposer ***"after a selection is made".*** MPI's proposal content and exceptions were not made "after selection but prior to award…", but **prior to submittal of their proposal**.

It is very clear that this is a breach of the negotiations protocol, and **results in a non-responsive bid by MPI**.

> Part 3 of the RFP provides that "[a]fter selection but prior to award of the [c]ontract, UTA may choose to conduct negotiations with the successful proposer…." Part 3 of the RFP also provides that "UTA reserves the right to negotiate price, scope, schedule and other contract terms with the preferred [p]roposer after a selection is made." Part 3 of the RFP further provides that "[i]f UTA and the selected [p]roposer are unable to reach a meeting of the minds on the scope, contractual terms, and/or price of the [c]ontract, then UTA may, in its sole discretion, negotiate with the next most advantageous [p]roposer or choose to terminate the procurement in its entirety."

Review of Major Points

HPI is in full compliance with all technical and commercial aspects of this 17-2455JH specification.

MPI took numerous exceptions, both technically and commercially, resulting in non-compliance:

- **Lower cost/price, resulting in inaccurate proposal evaluation**
- **Significant change orders required to fully meet specification**
- **Inferior offering of requalify and repair of aged engines/components, resulting in UTA incurring significant long-term failures and costs.**
- **Unachievable approach to Tier 2+ emissions requirements.**

HPI is the most responsive and qualified bidder and should be awarded this engine rebuild and upgrade contract.