

# MEMORANDUM

To: Chief Engineer, Advanced Turbine Engine Program  
From: Dr. A. Patel, Propulsion Credibility Board  
Date: March 15, 2026  
Re: Model Risk Assessment - HPT Blade CHT Analysis

## 1. Purpose

Model risk assessment for HPT blade CHT analysis per NASA-STD-7009B.

## 2. Model Influence

CFD used for preliminary screening. Testing confirms key results. Influence: MEDIUM.

## 3. Decision Consequence

HPT blade is safety-critical. Incorrect temperature predictions could cause blade failure. Consequence: HIGH.

## 4. Model Risk Level

MEDIUM influence x HIGH consequence = MRL 3.

## 5. Required Activities at MRL 3

- Code verification with MMS benchmarks (Level 3)
- Mesh convergence at all critical locations (Level 3)
- Validation against engine-representative data (Level 3)
- Probabilistic UQ on outputs (Level 3)
- Independent technical review (Level 3)
- Data pedigree documentation (Level 3)