



Waste Treatment Plant Project

## Performing Design Analysis (Calculations)

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**URS**



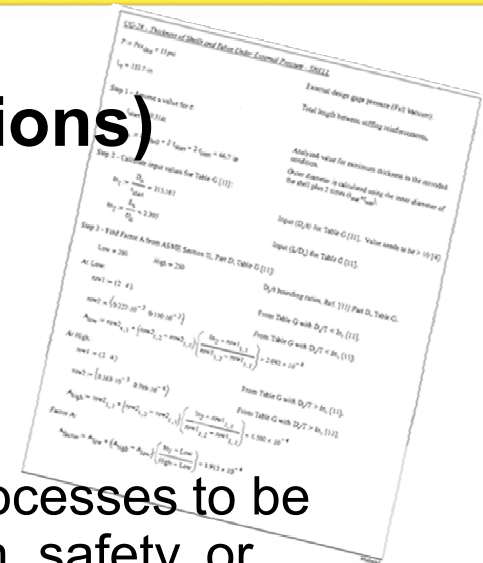
# Performing Design Analysis (Calculations)

Specification 24590-WTP-G000-T0014

## Supplier Design Analysis

### ■ Purpose:

1. Establish and define the requirements and processes to be used by the suppliers when performing design, safety, or hazards analysis activities (calculations)
2. Define the required content for design and safety analysis reports (calculations) specified in the requisition and submitted in accordance with G-321-E requirements
3. Establish and define the requirements and processes for the documentation and use of software used to perform or support an analysis (calculation)





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### ■ Supplier's Responsibilities

- Documenting the analysis in a manner that an individual who is technically competent in the subject can review and understand the analysis and verify the adequacy of the results without recourse to the originator
  - This includes all aspects of the analysis, such as understanding of the formulas and methodology employed, inputs, assumptions, results, boundary conditions, code compliance application, analytical modeling, geometric modeling, data post processing, etc.
- Implementing a software quality assurance program in accordance with the requirements identified in the requisition and applying the appropriate software life cycle work activities to software used to support the analysis of Quality structures, systems, and components (SSCs) associated with the requisition



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- Supplier's Responsibilities (cont.)
  - Applying the appropriate life cycle work activities to ensure the software produces correct results over its intended range of use
  - Promulgating the requirements of this specification to any sub-suppliers and their sub-suppliers when analysis is being performed by a sub-supplier



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- Sections contained in 24590-WTP-3PS-G000-T0014
  - 3.0 Design Analysis Report requirements
    - General
    - Design Analysis Report contents
    - Review and approval
  - 4.0 Software Quality Assurance Requirements
    - Source of requirements:
      - » ANSI/ASME NQA-1 2000, *Quality Assurance Program Requirements*
      - » DOE Order 414.1C, *Quality Assurance*
      - » ANSI/ANS 10.4, *Guidelines for the Verification and Validation of Scientific and Engineering Computer Programs for the Nuclear Industry*



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- Sections contained in 24590-WTP-3PS-G000-T0014 (cont.)
  - 5.0 Buyer Toolbox Software Applications
    - Buyer toolbox software applications are commercially available software used by WTP to perform our analysis
    - These WTP software applications are verified and validated by the WTP and constitute a “safe harbor” methodology/approach
    - Example list of software applications that are considered buyer toolbox applications:
      - **AGI32 Lighting Calculation Program**
      - **ANSYS**
      - **ARCON96**
      - **CAFAST**
      - **ETAP Powerstation**
      - **Facility flow, Aerosol, Thermal, and Explosion Model (FATE)**
      - **GTStrudl**
      - **MACCS2**
      - **Microshield**
      - **Monte Carlo N-Particle (MCNP)**
      - **Pipe-Flo Compressible**



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- Sections contained in 24590-WTP-3PS-G000-T0014 (cont.)
  - 6.0 Non-Mandatory Software Guidance
    - This section contains non-mandatory guidance based on industry experience, experience in establishing and implementing a software quality program, and lessons learned. There are no requirements in this section and the use of the guidance should be based on the supplier's software engineering experience and expertise
  - 7.0 Documentation and Submittals
    - Design analysis reports are documented in accordance with Section 3 of the specification and submitted in accordance with G-321-E requirements
    - Requests to use unqualified software in analysis or to apply the tool box approach shall be provided to WTP by letter correspondence



**QUESTIONS?**

***Email or Text***

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