A ***PROJECT*** or the members of Greater Houston Section

Fellow members, I'm asking for your help in completing a handbook project for the ASNT. We've been assembling a new hand book for ASNT, **NDT in the Petro Chemical Industry**. Here in Houston, we have the largest group of NDT inspectors and practitioners in the petro chemical industry in the United States who provide their service each and every day. You the NDT inspectors and practitioners have the NDT knowledge and the expertise in the industry. I'm asking that you provide your knowledge and expertise input into this handbook endeavor. Following is an outline of the handbook. If you have knowledge, write procedures, or provide NDT services in any of the subjects you can provide the needed input. It's really very simple, you make an outline of what you do. Provide the outline for review and when the review is completed you just fill in the outline with you knowledge. I will be presenting a short presentation at the September meeting about this endeavor and give you information on how you can help in providing the data for the handbook. The Greater Houston Section has always been a leader in NDT and are looked up to by other Sections and the International Service Center (ASNT Headquarters) because we get things accomplished like no one else. I don't believe that no other sections has ever written a Handbook, we the GHS be the first. Keep in mind that all who provide the data input will be recognized in the handbook.

Sincerely
Jerry Fulin

1. **Introduction**
    - Importance of NDT to the PetroChemical Industry
        - Need for reliability
        - Uniqueness of inspections relative to other industries
        - Development of industry integrity requirements due to historical failures
        - Risk Based Inspection and Fitness for Service
    - History
        - Background to PetroChemical Industry
            - Refining & Processing Plants
            - Pipelines
2. **NDT Applications with Capabilities and Limitations**
    - Refining & Processing Plants
        - Storage Tanks
            - Aboveground
            - Underground
        - Pressure Vessels
        - Cokers
        - Heat Exchangers
        - Reactor Vessels and Tubing
        - Reformers and Tubing
        - Piping & Valves
            - Accessible
            - Non-accessible
                - CUI
                - Supports
                - Buried
                - Penetrations
                - Elevated
        - Nonmetallic
        - High Temperature Vessels & Piping

    - Expansion Joints
    - Flanges
    - AUV – air utility vehicles “Drones”)
    - LNG ?
- Transportation
    - Rail Road
    - Shipping, oil tankers, etc.
    - LNG, shipping, etc.

- Pipelines/Transmission (
    - Piggable Lines
        - ILI Techniques
        - Direct Assessment
        - Integrity Assessment
    - Non-Piggable lines
        - Internal Techniques
        - External Techniques
    - Offshore
    - Loading Lines

3. **Special NDT Areas pertaining to PetroChemical Industry**
    - Corrosion Under Insulation (CUI)
    - Permanently Installed Sensors
    - Global Screening techniques
    - Positive Material Identification (PMI)

4. **Personnel Qualification and Limitations of NDT Techniques**
   (Put most worldwide schemes here along with personnel qualification/technique limitations)

5. **NDT Methods Used in the PetroChemical Industry**
   (brief descriptions of methods with references to more detailed info)
    - UT (*EMAT, TOFD, phased array, guided waves*)
    - MT
    - MFL
    - PT
    - VT (*RVT, Laser*)
    - ET (*ACFM, RFT, XRFT, phased array*)
    - RT (CR, DR)
    - AE
    - LT
    - IR
    - Microwave (GPR, CUI)

6. **Codes & Standards Applicable with Industry Segments (tables, acceptance criteria, requirements)** *I’m not sure about this section- maybe better inside another section*

7. Industry Documents for Guidance
   7.1. API RP 571 Damage Mechanisms Affecting Equipment In the Refining, Fossil Utility, and Other Process Industries
   7.2. API RP 580 Risk-Based Inspection
   7.3. API RP 579 Fitness-For-Service
   7.4. OSHA Mechanical Integrity Process Safety Requirements
   7.5. DOT,PHMSA Pipelines

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- API - 5B, 5CT, 5D, RP7G, Spec 7, 11B, 5L, 5LX, 1104
- ASME -
- AWS -
- ASTM -
- EN -
- ISO -
- TEMA (*heat exchangers*)
- CPI Specialized NDT Personnel Qualification and Certification
    - SNT-TC-1A
    - ILI Pipeline Inspection ASNT
    - API QUTE for UT

8. **Glossary of Chemical/Petroleum Industry and NDT/NDE Terminology**
9. **References**