



To Outsource or Insource...That is the question!

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- The decision to Outsource or Insource your NDT requirements can be a tough one. In this presentation I will discuss the pro's and con's of each to hopefully help companies understand both paths.
- At the end of this presentation if anyone would like to share their personal experiences it would be greatly appreciated.

Outsourcing your NDT processes...The Pros!

- NDT Service Companies have the accreditations and quality systems in place to meet your customers requirements.
- NDT Service Companies have made the capital investments on NDT equipment.
- NDT Service Companies have made the investments in Certified NDT personnel.
- NDT Service Companies generally have multiple NDT modalities that allow you to bid on more business.
- Liability of inspection results is with the NDT Service Company and not the product manufacturer.
 - There will always be the separation of production and quality.

What “pain” pushes you towards Outsourcing?

- Infrastructure
 - NDT Equipment takes up a lot of floor space and can require structural changes to an existing building.
 - X-ray room – could require a new floor to handle the weight.
 - Penetrant, Mag Benches, UT Tanks require air lines and plumbing.
 - Additional Power Requirements.
- Budget
 - NDT Equipment will require large dollar up front costs.
 - Certified NDT personnel are expensive .
- Growth
 - By not considering outsourcing NDT you could be limiting your growth potential when it comes additional product offerings.

Types of Outsourcing

- Send product to an NDT Service Company
 - Product is sent to NDT Service Company.
 - Inspection is performed.
 - Certification is issued.
- NDT Service Company comes to your facility to perform on site inspections when required
 - Examples would be for large parts that are not conducive to ship to an NDT service company.
- Co-Location Model
 - NDT Service Company puts equipment and certified personnel inside your facility on a permanent or contracted basis.

How to identify the right NDT Service Company to meet your requirements

- When you take on manufacturing product the end user will supply a drawing specifying which NDT modality is required and what NDT specification and standard the parts must be inspected to.
- For Aerospace work you might need a NADCAP accredited NDT Service Company or an NDT Service Company with specific approvals by specific aerospace primes.
- For say refineries, pipelines, and large structures with many welds to inspect you would likely reach out an NDT Service Company who specializes in field NDT inspection.

Insourcing your NDT processes. The pros!

- You have control of your lead times and product flow.
- You've identified your true costs.
- You have control of purchasing exactly the right NDT solution to meet your specific needs.
- If your product allows for re-work of defect areas you can quickly re-work an area and inspect it without sending it to an outside NDT source.

What “pain” comes with insourcing your NDT processes.

1. Not understanding what it truly takes to certify personnel in the various NDT methods.
2. Purchasing equipment before understanding what equipment is the best fit for your specific inspection and specification needs.
3. Understanding what accreditations are required to have a truly compliant in house NDT Program.
4. The actual cost of Level 3 Consulting, Certified Technicians, Equipment, Accessories, Consumables, Infrastructure, Preventative Maintenance, and Safety.

Potential Pitfalls to Insourcing

- Hiring the wrong certified NDT technicians.
 - Example: You own a weld shop that is getting into welding product that requires NDT inspection.
 - You hire a Level 3 who only has ever inspected castings.
- Purchasing the wrong equipment.
 - X-ray – Is film or digital the right move? Gamma? MEV? 160-450 KV? CT?
 - FPI – Water Wash, PE, or both?
 - MT – Wet Fluorescent or Dry Powder
 - UT – Phased Array? Thickness Testing?
 - ET – Sorting? Flaw Detection?

Insourcing your NDT processes

- You've now identified quantifiable pain.
 - Controlling lead times.
 - Controlling costs.
 - Controlling product flow.
- You've identified and understand the potential pitfalls that come with Insourcing
 - Hiring wrong certified personnel.
 - Purchasing the wrong equipment.

The Steps to implementing your Insourced NDT Program

- Step 1
 - Identify the budget and available footprint for your NDT program based on the pain identified to Insource
- Step 2
 - Hire a Certified Level 3 or Contract a Certified Level 3 to lay out the path to a qualified in house NDT program.
 - Hire certified qualified Level 2's or have your Level 3 train entry level employees to NAS-410 or SNT-TC1A
- Step 3
 - Purchase NDT Equipment that best meets your scope of work to include Quality and throughput needs.
- Step 4
 - Acquire all accreditations needed to successfully kick off your in house NDT Program

NDT for Informational purposes only

- Some NDT work is done for informational purposes only and may not require certified NDT personnel.
- In this case insourcing or outsourcing will both work.
- If you choose to insource this you just have to factor in what you are looking to accomplish and what equipment is needed.
 - Training may consist of product training only or some basic NDT courses whether in person or online.
 - Some additional costs may be developing a Radiation Safety Program if X-ray is the modality of choice.

To Outsource or Insource...That is the question!

- Now that we've laid out the basics to Outsourcing or Insourcing your NDT Processes we've hopefully come to the following conclusions.
 - Both have their benefits depending on each individual situation.
 - Both have costs. Some hidden and some out in the open. The key is truly identifying all costs when factoring which route to go.
 - Finally I think it's clear that the most important factors are finding a qualified/certified NDT Service Company or qualified/certified NDT personnel depending on the path you choose.
 - Good luck in whatever path you follow!

Questions/Stories

- Please share stories or experiences that pertain to Outsourcing or Insourcing your NDT processes!

THANK YOU

