

Understanding ASME® Joint Reviews: A Comprehensive Guide

What is an ASME® Joint Review?

An ASME® Joint Review is a rigorous process conducted by the National Board of Boiler and Pressure Vessel Inspectors (NBBPVI) to assess the quality and safety of pressure vessels and boilers. This review involves a thorough examination of the manufacturer's quality assurance program, design procedures, fabrication processes, and inspection techniques.

Why is a Joint Review Important?

- **Ensuring Safety:** Joint Reviews help to ensure that pressure vessels and boilers are manufactured to the highest safety standards.
- **Maintaining Quality:** They promote continuous improvement in manufacturing practices.
- **Compliance with Regulations:** Joint Reviews help manufacturers comply with the ASME® Boiler and Pressure Vessel Code (BPVC) and other relevant regulations.

Key Elements of an ASME® Joint Review:

Document Review:

- Review of the manufacturer's quality assurance program documentation, including procedures, work instructions, and records.
- Verification of the adequacy of design calculations and stress analysis.
- Review of material specifications and test reports.

Facility Inspection:

- Inspection of the manufacturing facility to assess the adequacy of equipment, tools, and facilities.
- Verification of the cleanliness and organization of the manufacturing area.
- Inspection of the calibration of measuring instruments.

Witnessing of Manufacturing Processes:

- Observation of welding, heat treatment, and other critical manufacturing processes.
- Verification of welder qualifications and welding procedure specifications.
- Inspection of non-destructive examination (NDE) activities.

Review of Test Data:

- Review of hydrostatic test data, radiographic test results, and other test reports.
- Verification of the accuracy and completeness of test data.

Inspection of Finished Products:

- Visual inspection of the finished product to verify conformance to design requirements.
- Verification of the application of appropriate markings and stamps.

Preparing for a Joint Review:

- **Maintain Detailed Records:** Keep accurate records of all manufacturing processes, inspections, and tests.
- **Train Personnel:** Ensure that all personnel involved in manufacturing are properly trained and qualified.
- **Implement a Robust Quality Assurance Program:** This program should include procedures for material control, welding, NDE, and quality control.
- **Address Non-Conformances Promptly:** Any non-conformances identified during the manufacturing process should be addressed promptly and effectively.

By understanding the key elements of an ASME® Joint Review and taking proactive steps to prepare for it, manufacturers can ensure the quality and safety of their pressure vessels and boilers.

HOW TO OBTAIN AN ASME® / NBIC® CODE STAMP

The requirements for obtaining a Certificate of Authorization for using a Code Stamp differ somewhat for each stamp. Since the most common Code Stamp is a for pressure vessels, these guidelines are driven for obtaining that stamp. We can gladly provide the details regarding different requirements for the other Code Stamps should you need them.

This procedure explains the action steps in sequence, and it is important that you follow this sequence to avoid unnecessary delays. For example, your ASME® review audit will be delayed if you fail to file an acceptable ASME® application well before the desired joint review date.

AIA's

Several agencies are available to choose from, we have a list on this website for your convenience. It is important that the manufacturer and AIA have a compatible relationship. If you are ever unhappy with the AIA of record, you are able to change to another AIA. The AIA will assign an Authorized Inspector, who usually becomes the shop inspector and the primary contact for the AIA. The Authorized Inspector will be assigned a supervisor known as the AIS. The AIS may be involved in the program development's preliminary stages or not until the pre-ASME® Review Audit (as explained later). Both the AI and the AIS form part of the ASME® Review Audit Team headed by ASME® and have a counting vote on the audit recommendation.

Which Code stamps should you obtain?

Your choice of Code Stamps is a crucial strategic decision. It would be best if you had all the Code Stamps you believe will be required to cover the scope of products you wish to produce. Each additional Code Stamp does, however, slightly increase cost. It is wiser to apply for all the Code Stamps at once. If you apply for an additional Code Stamp after completing your Joint Review, you will need to perform a complete new Joint Review for the extra Code Stamp. Your Code Certificate(s) will need to be re-qualified every three years. This application process will need to be reconducted before the expiration date of your Code Certificates.

Although this article addresses only the guidelines for a "U" Certificate, many companies apply for several Code Stamps at the same time. Consult the applicable ASME® Code section and AIA for more detailed requirements.

In addition to obtaining an ASME® Code Stamp, you may consider applying for an "R" Certificate of Authorization. The "R" Certificate and Stamp are issued by the National Board of Boiler and Pressure Vessel Inspectors - not ASME®.

The "R" Stamp can be used only on pressure-retaining items that you repair or alter, not for new construction. Some jurisdictional authorities require companies to hold the "R" Certificate to perform repairs or alterations to boilers and pressure vessels. Application for the "R" Stamp to the National Board may be concurrent with your application for Code Stamps to ASME®.

Applications

Once you have decided which Code stamps to obtain, you must create a CA Connect Account through the ASME® website. To help navigate the website, click on the Certification & Accreditation tab, then the Boiler & Pressure Vessel (BPV) tab. From there, you can establish an account through CA Connect.

If you intend to apply for the "R" Certificate, you must also apply to the National Board of Boiler and Pressure Vessel Inspectors. The application is located at nationalboard.org. Once on their website, click on the Accreditation; R Stamp tab; the application is located in the box labeled 'Related Document' Form NB-12.

Ordering Codes and Standards

To obtain an ASME® Certificate of Authorization, you must purchase specific Codes and Standards. Each construction Code Stamp has a required list for the reference Code that are applicable. For the U-Stamp the following Code books are required: Section II, Part A, B, C & D, Section V, & Section IX.

Preparation of the Quality Control Program

One of the requirements for obtaining a Code Stamp is to demonstrate the ability to manufacture products to a documented Quality Control program. The first step in meeting this requirement is, of course, to prepare the documented Quality Control program. Specifically, this means writing a Quality Control Manual which documents how your organization intends to produce Code products. If your company holds ISO certifications, it is better to have the ASME® System as a separate supplement to existing quality systems. Typically, with ISO-compliant companies, the ISO program will reference the ASME® quality program as a stand-alone document. If you are in need of a Quality Control Manual, we would be happy to provide you with a quote to develop your new ASME® Quality Control Manual.

If your company doesn't have a person who is currently responsible for quality, you will need to appoint one at this time. This person usually carries the title of Quality Control Manager or other similar titles. However, within your company's written ASME® Quality Control Program, the defined responsibilities for the person are more important than the job title (hereafter referred to as the Quality Control Manager).

Since most Quality Control Managers have had little in-depth experience with the Code requirements, J Lowry, LLC may help prepare the program. Once the manual is implemented, it is also important that your plant personnel be properly indoctrinated and trained regarding the manual's content. Each person must understand the responsibilities as described in the manual. One of the more frequent problems results when the company prepares a good manual and the plant personnel doesn't learn how to use it.

One of the easiest ways to prepare a Quality Control Manual is to involve each department head in the process. It must be recognized that the act of writing each person's responsibility into this manual may result in power struggles between the various department heads. The feelings can be minimized if the Quality Control Manager will ask each department head to provide input in the manual regarding his/her department's responsibilities.

For example, let the Purchasing Manager write a brief subsection regarding his department's actions from the time a purchase requisition is received to the point where the material is unloaded from the supplier. The Quality Control Manager can take the department heads' input, resolve conflicts where necessary, and incorporate this information into a formal Quality Control Manual. Although this method of obtaining input will help, the majority of the responsibility for the manual preparation work will remain on the shoulders of the Quality Control Manager.

Determine a Demonstration Vessel

During the ASME® review, you must demonstrate to the team that your organization and Quality Control system can produce a vessel, or part vessel, which meets the ASME® Code requirements. In short, you must have a vessel in the process of fabrication during the joint review. This can be a small tank, such as an air receiver, and may or may not be Code stamped when completed.

This vessel should include tack, root and completed weld examples, but not the final closure weld. The entire Quality Control System should be followed, and your Authorized Inspector (AI) should make the appropriate inspections.

Should the fabricated item be ultimately for Code stamping, it may be fabricated under the AI's supervision. A cautionary warning has to be made that the vessel could be unusable under the Code in the unlikely event of an unsuccessful review. It should also be mentioned that even with a successful review result that the Code stamp itself could take 6 to 10 weeks to arrive, thereby delaying the completion and shipment of the vessel.

Preparing Welding Documents

Another requirement for obtaining an ASME® Code stamp is that all welding procedures to be used on Code work must be correctly documented, and each welder to be used must have properly documented qualifications. As a minimum, you will need a Welding Procedure Specification (WPS) and a supporting Procedure Qualification Record (PQR). Each welder must be qualified for the welding performed in the production, and those qualifications must be properly documented on a Welder/Welding Operator Performance Qualification (WPQ).

ASME® Section IX provides the general welding requirements and procedures for documentation. Section VIII, Division 1, provides other special welding requirements.

Although the Code provides most of the information that you will need to prepare welding documents and welder qualifications properly, the following hints may save you some time and money.

- Qualify all welders, if possible, in the 6G (all) position. This prevents having to later qualify the same welder in other positions. Care should be taken with small diameter welds, which often get manufacturers into trouble, and overlooked.
- Ensure that all qualification documents are signed by a manufacturer's representative (Welding Engineer, Quality Control Manager, etc.). The ASME® Code holds the Manufacturer responsible for welding and testing and, therefore, its representative must review and approve those produced by subcontractors.

All WPS, PQR and WPQ documents must be carefully filed, maintained, and copies distributed to appropriate personnel. Although samples of these documents may be included in your Quality Control Manual, the actual working documents should not.

Nondestructive Examination Documents

The Code requires manufacturers to perform Radiographic (RT), liquid penetrant (PT), magnetic particle (MT), and ultrasonic (UT) examinations using approved written procedures as outlined in Section V of the Code. All written procedures must be certified as being demonstrated to the satisfaction of the Inspector prior to use in production.

You must use either in-house or subcontracted RT and UT operators that have been qualified to a training and certification program, generally known as a "Written Practice", based upon the guidelines of SNT-TC-1A. PT and MT operators must be qualified to a training and certification program which meets your own internal company written standards.

Suppose you intend to subcontract the NDE operations. In that case, you should limit your vendors to those who can provide written procedures which meet Section V of the Code and personnel who meet the SNT-TC-1A (Code accepted Edition and Addenda) guidelines.

Although you may elect to subcontract the NDE, you are still responsible to the ASME® for meeting all Code requirements. You should obtain copies of all NDE procedures and personnel qualifications for your files and you should carefully review each document to assure Code requirements are met. Please consult with your AIA on all NDE companies you intend to use.

Subcontracting Services

Many companies will buy various services from local vendors. This is frequently a sound financial decision, especially during the early growth stages of a small company. Some of the most frequent services sublet to other companies include engineering design, drawing preparation, metallurgical testing, NDE, and heat-treating. While there is no prohibition from purchasing such services, it is abundantly clear throughout the Code that the Manufacturer is responsible for all Code compliance. Your subcontractor may have a legal responsibility to perform services per your purchase order. Still, it is you, the Certificate Holder, who is obligated to ASME® to assure all Code requirements are met. In short, if your subcontractor fails to meet Code requirements, you may lose your Code stamps. Therefore, it is in your interest for you to carefully check organizations'

qualifications before contracting with them and carefully monitor their activities' actual performance.

You must provide assurance during the review of your Quality Control Program that you have absolute control of your subcontractor's service and that you accept Code responsibility for their work. Acceptance of responsibility is frequently accomplished by having one of your personnel signs (indicating approval) the procedures, drawings, test results, etc. of the subcontractor.

Contracting with an ASME® Accredited Authorized Inspection Agency

The AIA can generally be defined as an Agency that has undergone an audit and has been accredited by ASME® to fulfill the Code's duties.

One of the essential choices you will have to make regarding ASME® Code work is selecting an AIA. When you begin to contact specific AIA's, there are several factors to discuss that could influence your organization's choice. The first consideration is usually the fee charged for the service. Most have pricing standards based on hourly, half-day, full-day, etc., rate schedules. Most offer other quantity discounts when you require a full-time Inspector. It would be best if you inquired about contract maintenance fees, relocation charges (to transfer an Inspector into your area), minimum annual charges, a minimum hourly charge per visit, and if there is a cancelation clause or policy, etc.

Some of the most critical criteria cannot be directly compared in only financial terms. An AIA which does its job well can save your company money, such as by avoiding unnecessary rework and improving sales by assisting in the improvement of the quality of your products. Some typical questions to ask to evaluate a potential AIA are:

How much experience and training does the Inspector have in ASME® Code inspection activity?

- If you have an ISO 9000 system – is the AIA aware of the requirements? The introduction of an ASME® QC System should not affect existing programs.
- How much advance notice is required for the Inspector to arrange a visit?
- Is the Supervisor easy to reach for telephone consultation?
- What type of assistance will the Supervisor give to help prepare for the ASME® review?
- Can the Inspector inspect to the requirements of other codes and standards?

Once you have made your selection, each AIA has a standard contract for supplying services. You will have fulfilled the ASME® and National Board "R" requirement for having "an agreement" with an Authorized Inspection Agency when you sign the contract. Ensure you have the formal agreement signed before filing your application for the Certificate of Authorization with the ASME® and or National Board.

In many cases, an AIA representative will visit your facilities before signing an Inspection Agreement. The purpose of the visit is to assess the general capabilities of your company to fabricate Code items. They will be interested in seeing a draft of your Quality Control Manual, welding procedures, and other documents previously discussed. An evaluation of different areas such as design capability, the experience level of your personnel, subcontractor relationships, and

any other factors which will impact your ability to meet all ASME® Code requirements will be made. You should use this visit as an opportunity to explore what actions are needed (such as revisions to the Quality Control Manual) to begin preparation for your joint review.

To clear up a frequent misconception: Although AIA services may be supplied by a boiler and pressure vessel insurance company, this does not mean the AIA has any insurance liability for any items you produce. Product liability insurance is available from your insurance agent, but insurance is not part of AIA services.

Submitting the Application

The applications are fairly self-explanatory but the following are a few comments which may prevent delays in processing your application or problems from occurring during the joint review of your Quality Control program.

If you intend to perform fabrication only at the shop street address, check the "Plant" block. However, if you intend to perform Code work at any location other than the shop location, check the "Field Site" block. If you intend to perform work at both the shop and at different locations, you should check both the "Plant" and "Field Site" blocks. Keep in mind that if you check the "Field Site" block, your Quality Control program must specifically address how your organization will assure that quality work is performed at the field locations. The joint review team will look closely at your Quality Control program to ensure field site work provisions are included.

- When stating the address of your shop facilities, use only the street address or other physical description of your shop's location.
- ASME® will not accept a Post Office box address because the Certificate of Authorization is issued to a specific shop location.
- The contractual arrangement with the AIA will be verified by ASME® before the review is scheduled. Your application will be delayed in processing unless you have completed all formal contracting requirements with your AIA.
- Another problem area on the application form is your "Company Name" and "Department, Division, etc." You must enter the exact legal name of your company as the "Company Name." If the Certificate of Authorization will be used by only one department or division of your company, you must also enter that department or division name.
- If your company is small and does not have separate production divisions, the "Department, Division, etc." section may be left blank.

Preparing for the Joint Review

Careful preparation and working closely with your AIA can significantly increase your chances of passing your review. Your AIA will also play a vital role in helping to prepare for the joint review. Since the AI is a member of the Review Team, you should ensure that it is not scheduled until that individual is satisfied with your entire Quality Control program.

You must carefully train your personnel regarding their duties as described in the Quality Control program. It is not necessary that every person be knowledgeable of the entire system. Each person must understand their individual responsibilities as laid out in the Quality Control Manual. Several short tutorial training sessions will help. Department heads and management officials should be exceptionally knowledgeable of their responsibilities and how to use the Quality Control program within their respective areas. The AI would also be prepared to help with the training.

The AI should will make several visits to your facilities before the joint review. In addition to these visits, the AI should be available for telephone consultation anytime you have questions. These visits will be to review the Quality Control Manual and other documents in detail.

During a final "pre-ASME® Review," the AIA AIS will audit your Quality Control System's actual implementation. This is to ensure that your personnel can fabricate Code items as described in the Quality Control Manual and supporting procedures.

The AI will accompany the AIS during the above visits. It may also be necessary for the AI to make other visits before the review. Since the AI is an integral part of the ASME® Code system, you must show during the review that the Inspector is familiar with your facilities, Quality Control program and that the duties required by the Inspector are being adequately performed.

The AI can be a valuable source of information, and you should use their visits wisely. The AI and the AIS will put your organization and Quality Control system to the test. They intend to help you pass the upcoming review.

When your AI is satisfied, your organization is ready; it is your responsibility to schedule the review. This means you must contact ASME®, the AI, and the AIS to arrange a mutually acceptable date. Choose your dates carefully as they impose financial penalties for subsequent cancellations.

The "Review"

The review of your Quality Control system usually takes two days (some jurisdictions complete their reviews in one day. Please discuss this with your AI). As mentioned earlier, the review team consists of your AI, the AIS, and the ASME® designated Team Leader. The review team begins its work during the morning of the first day. You should deliver to the pre-designated location (usually a hotel or motel) copies of your Quality Control Manual and completed ASME® "Guide" questionnaires for each team member.

The team will begin an extensive review of the Quality Control program as described in the documents you submit. Notes will be made on areas that require revision and areas where explanations will be requested. The team will also organize their activities for the remainder of the joint review.

Your top management personnel should be available during the review. Never tell the team that your organization cannot act on a request for a change in the Quality Control system because "it

would have to be approved by the Managing Director, and she/he is not here now." You must have the people available who can make decisions during the review.

Here are some other items which can be planned. You should have a room that the team can use as a "base of operation." They may desire to have private meetings there as well as discussions with your personnel. It would be best if you also had the ability to make revisions and changes in an expedited manner during the review. You may also desire to plan luncheon arrangements for the team. Lunch may be brought in or scheduled for a nearby restaurant. In either case, lunchtime should be as short as possible.

The team will generally arrive at your facilities on the afternoon of the first day. You should introduce them to your key management personnel and assure them the entire facility is ready for the joint review and that any information related to your ASME® Code production is at their disposal.

At this point, the Team Leader will describe the purpose of the visit and the general plan for accomplishing the review of your facilities. The team may also desire to make a brief orientation tour of your shop area.

The team will then review the Quality Control Manual and other Quality Control documentation in detail with the Quality Control Manager. Other management officials may also be present during this review. As each chapter's review is completed, you should immediately pass the marked-up copies to the individual responsible for making the changes. This will assure any necessary revisions will be formally included in the Quality Control Manual by the end of the review.

The team will then perform an implementation audit to ensure your organization implements the Quality Control program and Code requirements. You should have production personnel available, including those necessary to weld on the demonstration vessel mentioned earlier. These people should be made aware the team is not "auditing individuals." They are auditing the system. If your people do not know the answers to questions, they should know where to obtain the answers. If no one knows the answer, it is considered a deficiency in the training and indoctrination of personnel regarding the Quality Control system and not the fault of the person who cannot supply the answer. Generally, if it is a Code question and the answer is in the Code books, you would be able to consult your AI, however, if the answer is found in the Quality Control Manual, you are required to know the answer without assistance from your AI.

The implementation audit continues on the second day. The team will review any changes to the Quality Control Manual (or other documents), which should be completed by this time. An exit meeting will then be held with your management officials to cover the results of the review. You will either be told that the results were satisfactory or unsatisfactory. If unsatisfactory, you will be told why and you should assure that your management team understands what corrective actions are necessary.

The Team Leader will complete a written report of the results. The ASME® review team members will sign this report. The report will either recommend issuing the ASME® Code Certificate or list deficiencies and recommend the Code Certificate be withheld. This report is only the team's recommendation. However, the ASME® usually does not challenge the team's recommendation.

What to do if you fail

If the review results are such that the team does not recommend the Certificate of Authorization be issued, do not despair! It has happened before to both large and small companies throughout the world, and it will happen in the future.

Although you will be informed of the team's recommendation at the exit meeting, the official notification will come from ASME®. The leader will explain, in general terms, the reason why the Certificate of Authorization will not be issued.

You should work closely with your AIS and systematically correct each deficiency noted. You must then schedule another review and make another deposit payment to ASME®

During the next review, the team will again evaluate your Quality Control program. Detailed checks will be made to ensure that the deficiencies noted have been corrected. Upon completion, another exit meeting will be held, and you will again be notified of the ASME® Review Team's recommendation. Companies that fail the first usually pass the second.

The team also can recommend a 30-day follow-up. If the results from the audit are left with an open deficiency that is unable to be resolved prior to the end of the Joint Review, the team can recommend this option. This means you will have 30 days to correct the open deficiency and typically have the AIS follow up to verify the deficiency's correction. Once the deficiency is closed, the AIS will inform *ASME© and the team leader of the deficiency's closed status. Upon which the audit is considered successful.

Now That You Have a Code Stamp

Successful completion of the preceding steps will help you to obtain the Certificate of Authorization for the ASME® Code Stamp. A few final words are in order regarding the use of the stamp.

You should actually receive your Certificate of Authorization and Code Stamp about 4 - 6 weeks after the exit meeting. The Certificate of Authorization is good for three years, with the exception of the "UM" and "H" (Cast Iron).

You have worked hard and have spent a lot of money to obtain the stamp. If you violate ASME® Code rules, you can lose it. The ASME® initiates investigations regarding ASME® Code violations. Suppose the investigation results reveal your company is placing the Code Stamp on items that do not meet ASME® Code requirements. In that case, the ASME® will revoke your Certificate of Authorization. Don't let it happen to you.

Work closely with your assigned AI and AIS. Make sure the Inspector is involved in all Code work to the degree he/she desires. Maintain good relations and use the Inspector's Code knowledge to your company's benefit.

Toward the end of the three-year Certificate of Authorization period, you must apply for renewal. Your renewal application must be sent to the ASME® six months prior to your certificate's expiration. This is also an excellent time to consider applying for additional Certificates of Authorization or for the National Board "R", if you desire to expand the type of products you produce.

You must undergo another joint review, and most of the steps in this article will again apply.

Please remember we are here to help; please feel free to reach out to us if you have any questions.

Pre-Joint Review Checklist

1. Verify that the application sent to ASME and/or the National Board is correct and addresses the proper Keep a printed copy handy for the Joint Review.
2. For renewals, make sure the Certificates of Authorization are available and correct. Also have the Code symbol stamps available for review.
3. Verify that all applicable Codebooks are available for review.
4. Verify that the Authorized Inspectors Logbook is available, and all activities are documented. Also, for existing companies, verify that Monitoring Activities have been performed and Monitoring Reports are available.
5. Review the Quality Control Manual to ensure that it is current with any Code changes. Also, be sure all applicable parties have signed the Quality Control Manual and the personnel-issued controlled copies have the current edition and revision level.
6. Be sure that the titles listed on the Organization Chart are the same as those referenced in the Manual body. Also, check to see if the actual exhibits referenced are the same as those being implemented.
7. The "Guide for ASME Review Teams" will need to be completed and made available during the Joint Review.
8. Verify that the appropriate Drawings are available, and as a minimum, all information required by the Quality Control Manual is referenced. Also, verify that the appropriate personnel has approved the Drawings.
9. Verify that Calculations are available for all aspects of design, including supports, lift lugs, reinforcement, etc. Review all design information for correctness such as joint efficiency, corrosion allowance, proper material and stress values, impact test or exemptions, year of Code and addenda designed to, etc. Be sure that all information referenced on the Calculations matches that referenced on the Drawings. As mentioned in item #7, verify appropriate personnel approval.
10. If computer programs are used for design, documentation must be available from Engineering verifying the computer program's accuracy.

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11. All documents and their revisions must be issued and controlled as required by the Quality Control Manual. If there is an exhibit for this, be sure it is being implemented.
12. Verify that a Bill of Material and Purchase Orders are available for all. Also verify that all ordering information is addressed, such as "SA" material, forming requirements, the requirement of material test reports, proper Thickness and dimensions, etc.
13. Verify that all material is received and documented as required by the Quality Control Manual. Sometimes this is performed by Receiving Reports or by documenting receipt on the Purchase Order or Bill of Material. Regardless, it must be in accordance with the Quality Control Manual.
14. Verify that all Material Test Reports have been reviewed to verify Section II's compliance and the appropriate personnel acceptance has been documented.
15. Verify that the appropriate personnel have signed off the Travelers at the completion of each inspection activity. The Traveler must show an Authorized Inspector notification prior to the start of fabrication. Do not sign off on an activity if it has not been completed. For example: If there are welds that are not completed, then welder symbols should not be signed off on the Traveler.
16. A sample Manufacturer's Data Report should be completed for the demonstration item.
17. Check to see if there are any non-conformances and that the proper forms and procedures are being implemented.
18. Verify that all appropriate Welding Procedure Specifications (WPS), Welding Procedure Qualification Records (PQR), and Welder/Welding Operator Qualification Records (WPQ/WOPQ) are available. Be sure that the PQR and WPQ/WOPQ forms are certified. Also, verify that the WPS numbers are correct on the Drawing. It is critical to make sure that all ranges of qualifications are correct for the processes. For example, thickness, material, diameter, position, etc. QW-250 and QW-350 of Section IX list all variables, and these must be addressed on the QW-482, 483, and 484 forms.
19. Verify that the Welder Continuity Log is up to date and verify compliance to QW-322 of Section IX.
20. Verify that all welding materials are being stored in accordance with the filler metal manufacturer's recommendations. Also, be sure that all welding material is properly identified, and the proper filler metal and gas is being used.

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21. The NDE subcontractor's Written Practice, Procedures and Personnel Qualification and Eye Examination Records will need to be available and up to date.
22. A Level III appointment and acceptance letter will need to be available for the Level III acting on behalf of the company.
23. A calibrated Density as a minimum will need to be available. The Density Strip must have been calibrated within the last year. Also, a film viewer will need to be available during the Joint Review.
24. All NDE procedures that are used on Code work must be demonstrated to the Authorized Inspector. This must be documented on the procedure, separate form, logbook, etc.
25. If heat treatment is to be performed, verify that the furnace recording equipment calibration records are available.
26. Verify that all measuring and test equipment is calibrated, and records are available. In addition to test gauges, a set of micrometers/calipers and weld gauges should be available.
27. If the Quality Control Manual references a hydrostatic test procedure, then the procedure will need to be available for review.
28. For renewals, records must be available for review as required by the Record Retention section of the Quality Control Manual.
29. Suppose the company has been registering Manufacturer's Data Reports with the National Board. In that case, it is especially important to verify that the National Board Log is up to date and registration complies with NB-211 of the National Board. This also applies if the company has an "R" stamp and is registering "R" forms.
30. If the company is also applying for a "UM" Certificate of Authorization, verify that all information and certification records are available for the company's "Certified Individual".
31. It is essential to verify that all Code items are correctly identified with the Job/Serial number, proper material identification, welder symbols, etc. Also, all temporary and non-pressure attachments must maintain identification.
32. Verify that the joint design and dimensions are the same as the Drawing is referencing. For example: If the Drawing references welding from one side only, then there should be no back welding. If the Drawing references a nozzle to be flush, then there should be no inside projection.

Pre-Joint Review Checklist

33. If there is any non-conforming item, verify that a Non-Conformance Report is filled out and the item is properly identified. There is no problem having a non-conformance during a Joint Review as long as the Quality Control Manual procedures are followed.