Consolidated
Power Supply

March 18, 1993

Mr. Charles Rossi, Director
Division of Reactor Inspection
and Licensee Performance
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Request for Interpretation on Commercial Grade Dedication Practices

Dear Mr. Rossi:

This letter and the enclosed attachment are issued in order to obtain guidance for Consolidated Power Supply (CPS) and other vendors of similar scopes of supply who perform commercial grade dedication activities on metallic materials. I apologize for the lengthy nature of this document, however, it is necessary to provide ample information to allow for a specific response to this request.

The attachment provides some background information and examples that identify a few of the areas in question. A response is requested that provides guidance from a regulatory view-point to assist CPS in supporting a position that is acceptable to the commercial nuclear industry.

The vendors focused on for this request are distributors such as CPS that do not manufacture products, but primarily supply structural steel, flanges, fittings, tubular products without filler metal, reinforcing bar, and other similar non-nuclear unique materials to recognized industry standards. Also, many of these vendors provide ASME Code materials under their applicable ASME Certificate for materials (QSC).

If there are any questions or comments, please contact me at your convenience. Thank you in advance for your time and assistance.

Sincerely,

Steven W. Andrews
Quality Assurance Manager

Attachment - 7 pages

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A Division of Consolidated Pipe & Supply Co., Inc. Birmingham, AL

Consolidated
Power Supply

Attachment to Consolidated Power Supply Letter Dated 3/18/93

Background:

Relative to this request, the applicable vendor programs utilized for the dedication activities are designed to meet the requirements of 10 CFR 50, Appendix B. These programs are audited by licensees, component manufacturers, architectural/engineering firms, and other nuclear industry clients to Appendix B requirements (and other industry quality standards as applicable). These vendor programs have been deemed as satisfactory for performing commercial grade dedication activities.

Consolidated Power Supply (CPS) has struggled with an acceptable amount of sampling over the recent past, and has found that a multitude of sampling plans are currently being implemented by both vendors and licensees. The information on the variety of sampling is based on feedback from licensees during audits, interfacing with other vendors providing similar materials as those supplied by CPS, discussions with licensees that have conducted telephone inquiries with multiple vendors, and by review of NUREG-0040 reports. A clear, consistent and economical approach is desperately needed to put all vendors on the same playing field, providing qualified materials that have been satisfactorily dedicated for use in the commercial nuclear industry.

CPS has based its dedication program on information reflected in multiple NRC documents such as Generic Letters 89-02 and 91-05, along with information reflected in past NRC inspection reports. The level of verification of lot homogeneity currently plays a key role in our sampling process. For example, without obtaining objective evidence that a sub-tier supplier has the appropriate controls in place (i.e. - survey/ audit/surveillance by CPS for heat/lot/batch traceability), there is essentially little that can be done in the area of sampling. Without objective evidence of the sub-tier's program implementation, homogeneity and sub-tier certification documents have not been validated. Each piece of material would undergo the required testing as reflected in the CPS critical characteristics form for that type and grade of material. This may include but is not limited to tension, chemical, hardness, and/or hydrostatic testing. The basis for our "100 percent" approach without documented traceability to the melt facility is consistent with our interpretation of the NRC's current philosophies as identified in the aforementioned documents. Also, this level of assurance has been communicated by a limited number of licensees as mandatory requirements for implementing our dedication program. Our philosophies have facilitated the supply of 10 CFR 50 Appendix B materials to any domestic customer without

being challenged. Of course, CPS does get questioned more often than not on why such a high volume of testing is performed. Also, based on our company's primary scope of supply (commercial nuclear industry), it is not only an issue of programmatic philosophy compliance but a financial impact when the overhead places our company out of competitive range with other vendors of similar scopes of supply.

Based on information that has been obtained by CPS, there are extremes of sampling for testing currently being conducted. In some cases there are the "100 percent" vendors who utilize a restrictive sampling process based on documented objective evidence back to the original melt facility. In other cases there are vendors who may procure commercial material from an un-verified source such as another distributor, and will only perform testing on one piece of material, thus "qualifying" the balance of that lot. Apparently, justification for this is that the material was received with markings that are the same on all pieces procured, which may or may not be original mill markings. CPS refers to this qualification as the "buy-one-get-one-free" process. In other cases, vendors have been and continue to supply materials as 10 CFR 50 Appendix B without conducting any audits, surveys, or independent testing. Vendors utilizing lesser qualification methods obviously have a competitive edge, aside from the issue of implementing appropriate controls that meet current industry guidelines and requirements. When based on price alone, it is evident which type of vendor would supply most of the materials being procured by another vendor or a licensee.

It is our understanding that the utility industry is currently working on this issue, which includes interface with the NRC. This may or may not change current philosophies as interpreted by CPS. If the industry cannot adopt a consistent and acceptable approach to areas such as this, vendors that can no longer compete may be required to degrade their program in order to stay in business. It may be that several vendors could lessen their current programs and still comply with industry requirements. Also, it is possible that some vendors and licensees have not done an adequate job in interpreting various industry documents and overkill the dedication issue.

The information below represents common examples that occur during daily activities. Your response is requested addressing these examples, which are not necessarily those endorsed or implemented by CPS.

Example #1:

A vendor procures ASTM A 36 angle directly from a melt facility (mill). The melt facility is surveyed on an annual basis for the scope of material traceability. The vendor's procurement document reflects invocation of the current mill quality program manual, and requires a conformance/compliance statement to such program on the mill certification document (MTR). The mill's quality manual does not meet all elements of 10 CFR 50 Appendix B. 10 CFR 21 is not invoked in the vendor's procurement document. Upon receipt by the vendor, the mill test report is reviewed by the inspector. Upon acceptance by the inspector, one piece from each heat of material is provided to a testing facility to conduct the destructive and nondestructive testing identified in the critical characteristic listing for that type and grade of material. A tension test and full chemical analysis is performed using equipment qualified under the vendor's 10 CFR 50 Appendix B quality program. No additional destructive or nondestructive testing is performed on the balance of the material. All pieces receive a dimensional inspection as the mill was not qualified for its control over measuring and test equipment, based on the fact that the mill does not conduct any type of qualification on calibration suppliers.

Question 1: Is it possible to perform a sampling (10% for example) of the material received for conducting the dimensional inspection activities?

Question 2: Is it acceptable to perform destructive testing on only one piece from each heat as the mill was surveyed for traceability of material?

Question 3: Is it necessary to perform destructive testing, such as tension tests and chemical analysis on the material, or only perform nondestructive testing such as hardness and/or alloy verification?

Question 4: Is it necessary to even perform a survey of the mill if the vendor's purchase order is placed directly with the mill? The material and certification would be provided directly to the vendor without the use of a distributor, and the material reflects appropriate mill identification (heat/lot number) to enable traceability of the material to the test report.

Example #2:

A vendor procures ASTM A 240 type 304 plate from a distributor who implements a quality program that does not meet 10 CFR 50 Appendix B requirements. The program is invoked by the vendor's procurement document without 10 CFR 21 requirements. The distributor's program is surveyed by the vendor on an annual basis and found to be satisfactory for maintaining traceability of material within their surveyed facility. Also, the distributor has a documented section in its quality program that addresses surveys of their suppliers. As the distributor does a large volume of commercial business, all material is procured directly from the mills that have been surveyed. The distributor does not invoke the quality program in its procurement documents utilized by the mill. In addition, the distributor may segregate the material within its surveyed facility, but does implement satisfactory controls for maintaining traceability for the subdivision of material as evaluated during the vendor's survey at the distributor's facility. The distributor provides certification that reflects a conformance/compliance statement to the program invoked in the vendor's procurement document, in addition to a copy of the material manufacturer's test report. Upon receipt by the vendor, one piece from each heat is tested in accordance with the critical characteristics reflected for this specification and type of material. This includes tension testing and chemical analysis, which is destructive. No other destructive or nondestructive testing is conducted on the balance of the material received by the vendor. All pieces receive a dimensional inspection as the distributor's program has not been qualified for appropriate measuring and test equipment control.

Question 1: Is it possible to perform a sampling (10% for example) by heat or lot of material received to perform dimensional inspection activities?

Question 2: Is it acceptable to conduct the testing on one piece from each heat or lot if traceability to the melt facility is documented and verified?

Question 3: Is the distributor's procurement document required to invoke the mill's controlling quality program manual to accomplish testing of one piece per heat? If so, should there be a statement of conformance/compliance to the mill's program on their certification document?

Question 4: Do the material markings have to be those of the original material manufacturer (mill) to conduct any sampling process?

Question 5: Is nondestructive testing required on additional pieces of material to correlate to the destructive testing performed from the same heat of material?

Question 6: Is destructive testing, such as chemical analysis and/or tension testing, even required to dedicate the material, or could hardness testing or an alloy verification be conducted to reasonably assure the material is what was ordered?

Example #3:

A vendor procures ASTM A 234 fittings from an un-surveyed distributor as commercial material. No program or programmatic controls are invoked in the vendor's procurement document. A material test report is required which must be traceable by heat or lot number to the fittings supplied. The material may or may not reflect the original material manufacturer's markings. The actual mill test report may or may not be supplied with the fitting manufacturer's test report. Upon receipt, the vendor verifies that all fittings reflect the heat or lot number which is traceable to the fitting manufacturer's test report. One fitting from each heat is destructively tested using tension testing and chemical analysis as reflected on the critical characteristics form, with no other destructive or nondestructive testing being performed on the balance of the material. Dimensional inspections would be performed on all fittings not destroyed by the testing for compliance to the applicable ANSI specifications.

Question 1: Is it necessary to perform destructive testing, or could nondestructive testing such as hardness testing and/or alloy verification be utilized?

Question 2: In response to question 1, if only nondestructive testing is required, could a sampling (10% for example) be tested, or should all fittings be tested, or could only one fitting be tested?

Question 3: Is it possible to perform dimensional inspection activities on a sampling (10% for example) of the fittings?

Question 4: Is there a difference if the mill test report accompanies the fitting manufacturer's test report, and the fittings reflect the actual fitting manufacturer's markings as opposed to a distributor's marking of the material?

Question 5: Is it acceptable to perform destructive testing on one fitting and then perform nondestructive testing such as hardness testing on the balance or a sampling (10% for example) of the balance?

Example #4:

A vendor procures ASTM A 36 plate from a distributor that has not been surveyed. No program or programmatic controls are invoked in the vendor's procurement document. A material test report is required with the material. The distributor provides a test report from the mill and marks the plate with the heat/lot number corresponding to the test report received with the plate. The vendor then performs tension testing and chemical analysis on each piece of plate. Also, each piece receives a dimensional inspection. Test reports from the qualified test facility confirms that the material meets the requirements of A 36, however review of the results against the manufacturer's test report reflects the material may be from another heat or even another plate manufacturer.

Question 1: Is the product acceptable?

Question 2: Is it possible to conduct the aforementioned destructive testing on only one piece of plate and perform nondestructive testing such as a hardness test on the balance or sampling of the balance?

Question 3: Is destructive testing necessary or could one piece, all pieces, or a sampling of the pieces be tested nondestructively?

Question 4: Is it possible to perform dimensional inspection activities on a sampling of the material?

Example #5:

A vendor procures ASTM A 569 sheet from a distributor. No quality program is invoked and no mill or material test report is available. The material may or may not reflect the manufacturer's markings, and may not even reflect a heat or lot number. The vendor tests each piece of sheet and verifies by testing all of the requirements of the material specification. The test results, which comply with A 569, are provided to the customer as the only verification that the material meets the specification. The vendor will mark the material with appropriate trace codes to tie the material to the test reports and other applicable certification.

Question 1: Is the above an acceptable practice?

Question 2: Is it possible to perform destructive testing on one piece only?

Question 3: Is it possible to perform destructive testing on one piece and perform nondestructive testing on the balance or sampling of the balance, to correlate to the destructive testing performed?

Question 4: Could only nondestructive testing be performed, such as hardness, provided the material specification had either hardness values to check against, or tensile values that could be approximated by the hardness testing?

As indicated above, many scenarios arise during daily activities. CPS management has taken a conservative approach to the dedication issue. However, based on the financial impact of the philosophies utilized, CPS is having to take a hard look at our current program requirements. In order to be competitive, it is possible that lesser degrees of verification activities would be implemented by CPS in the future for customers that will accept such. As conveyed in the background portion of this correspondence, financial impact is one of the primary reasons for this request.

Also, CPS is interested in a time frame for conveying a regulatory position, and how this information could be conveyed to the industry. Once such a position has been attained, the industry will need a process to convey and enforce such.

Your efforts in providing a response to the information reflected above is greatly appreciated.