

# CATEGORY 1

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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AUTH. NAME      AUTHOR AFFILIATION  
 LEVINE, J.M.      Arizona Public Service Co. (formerly, Arizona Nuclear Power  
 RECIP. NAME      RECIPIENT AFFILIATION  
                          Records Management Branch (Document Control Desk)

SUBJECT: Submits info contained in encl to aid NRC in timely review  
 of requested code alternative. All items presented are  
 considered commitments.

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102-04144-JML/SAB/RKB  
July 10, 1998

U.S. Nuclear Regulatory Commission  
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References: (1) Letter 102-04138 dated June 25, 1998, from J. M. Levine,  
APS, to USNRC.

Dear Sirs:

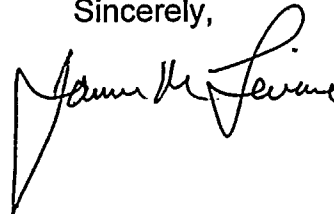
**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2, and 3  
Docket Nos. STN 50-528/529/530  
Request for Proposed Alternative to ASME Section III Class 3  
Requirements for Installation of Safety-Related Flow Measurement  
Instrumentation - Supplemental Information.**

In reference 1, Arizona Public Service Company (APS) requested NRC approval of a proposed code alternative, in accordance with the provisions of 10 CFR 50.55a (a)(3), for the installation of an in-line safety-related flow measurement instrument in an ASME Class 3 pipe. In a subsequent telephone discussion conducted on July 8, 1998, between APS and members of the NRC staff, it was determined that certain supplemental information would aid in the staff's review of the code alternative request.

APS hereby submits the information contained in the enclosure to aid the staff in a timely review of the requested code alternative. All items presented in the enclosure are considered commitments.

Please contact Mr. Scott Bauer at (602) 393-5978 if you have any questions.

Sincerely,



JML/SAB/RKB/mah

Enclosure

cc: E. W. Merschoff  
M. B. Fields  
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Enclosure

Supplemental Information  
to Support Code Alternative Request  
for In-Line Flow Sensor

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The APS Nuclear Assurance Department performed a Commercial Grade Survey of the Micromotion Incorporated (MMI) facility in October, 1997. The survey included the following processes: Material of Construction; Manufacturing Process/Configuration Controls; Measuring and Test Equipment; Welding; Non-Destructive Testing; Hydrotest; Cleaning; and Nonconformance Control. As a result of this survey it was determined that pressure boundary materials would be verified by APS, and further surveillance of the welding process for attachment welds and NDE would be required. This was due to APS' requirements that are beyond the normal manufacturing processes of the manufacturer. Verification that welding for the attachment welds is performed using qualified procedures and welders and that the implementation of NDE is in accordance with procedures and APS purchase order requirements will take place during the manufacture of the flow sensors. Material verification will be as detailed below.

1. A total of three quality-related flow sensors are to be purchased from MMI; one quality-related flow sensor will be installed per Unit.
2. APS will require that all pressure boundary material (flow tube and manifold) be supplied from the same heat and lot number. The vendor receives material test reports from their supplier and will maintain material traceability throughout the manufacturing process.
3. The material specifications for pressure boundary material are as follows:
  - Flow tubes – ASTM A269-96, Type 316L, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service. MMI only uses seamless tubing.
  - Manifold – ASTM A351-94a, Grade CF3M, Standard Specification for Castings, Austenitic, Austenitic-Ferritic (Duplex), for Pressure Containing Parts.
4. Since there is not enough material to remove from an existing manifold for destructive testing, APS will purchase an extra stainless steel manifold casting from the same heat and lot for the purpose of destructive testing (i.e., chemical and tensile testing) to verify material properties per the material specification. This testing shall be performed at an APS approved laboratory with an approved 10 CFR 50, Appendix B Quality Assurance program. This seventh manifold will be from the same heat and lot as the six manifolds used for the instruments which will be installed in the plant.
5. APS will require supplemental liquid penetrant testing of the remaining six manifolds (two manifolds per flow sensor). This testing will be performed by the manufacturer with APS surveillance. The six manifolds from the same heat and lot will be tested with an Alloy Analyzer to confirm material type.





6. Flow tube material will be verified by chemical testing, hardness tests, and by hydrostatic testing. The chemical and hardness testing will be performed per the material specification at an APS approved laboratory with an approved 10 CFR 50 Appendix B Quality Assurance program. The sample material will be from the same tubing heat and lot as that used in each flow sensor. APS is not requiring a tube flaring test to be performed since the tube system design application pressure is 200 lbs and the tubing is already undergoing rigorous hydrostatic testing.
7. Per the manufacturer's procedures, the flow meters are hydrostatically tested twice: the first time is without the flanges at 1.5 times the flow tube pressure rating (2175 psig) for 10 minutes and the second time after the flanges are attached at 1.5 times the flange rating for 10 minutes. APS will require the second hydrostatic test to be at 300 psig (2 times the 150 lb flange rating) to ensure the flange welds are acceptable per Section III requirements. The manufacturer will perform this test and submit the results.
8. Acceptance criteria for all non-destructive examination (NDE) shall be per 1974, winter 1975 addenda, ASME Section III, requirements. NDE procedures and qualifications will be per ASME Section V.
9. The flow sensors will be installed per PVNGS' ASME Section XI Repair and Replacement Program, 1992 Edition, 1992 addenda. APS will perform an ASME Section XI IWA-4000 Code reconciliation for installation of the flow sensors.

