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Stephenie L. Pyle
Manager, Licensing
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2CAN051202

May 21, 2012

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Additional Information Related to Request for Alternative ANO2-ISI-007
Code Case N-770-1 Baseline Examination
Arkansas Nuclear One, Unit 2
Docket No. 50-368
License No. NPF-6

REFERENCES:

1. Entergy letter dated November 30, 2011, "Use of Alternate ASME Code Case N-770-1 Baseline Examination Request for Alternative ANO2-ISI-007" (2CAN111101) (ML113340158)

2. NRC email dated February 23, 2012, "RAI for the Request to use Alternate ASME Code Case N-770-1 Baseline Examination, Request for Alternative ANO2-ISI-007" (TAC No. ME7646) (ML120541089)

3. Entergy letter dated April 13, 2012, "Response to the Request for Additional Information Regarding Request for Alternative ANO2-ISI-007 Code Case N-770-1 Baseline Examination" (2CAN041202) (ML12104A066)

Dear Sir or Madam:

Entergy Operations, Inc. requested NRC approval of a Request for Alternative for Arkansas Nuclear One, Unit 2 via Reference 1. The request is associated with the use of an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Code Case N-770-1, as conditioned in the Final Rule 10 CFR 50.55a(g)(6)(ii)(F)(3), dated June 21, 2011.

In Reference 2, the NRC determined that additional information was needed to complete the review of Reference 1. Reference 3 provided the requested information. Subsequently, a conference call was held with the NRC on April 26, 2012, to discuss the responses provided in Reference 3 and to clarify a portion of the request in Reference 2. Based on this conference call, it was determined that additional information was required. The purpose of this submittal is to provide that information.

This submittal contains no regulatory commitments.

Should you have any questions, please contact me.

Sincerely,

Original signed by Stephenie L. Pyle

SLP/rwc

Attachment: Additional Information Related to Request for Additional Information – Use of ASME Code Case N-770-1 Baseline Examination

cc: Mr. Elmo E. Collins
Regional Administrator
U. S. Nuclear Regulatory Commission, Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

NRC Senior Resident Inspector
Arkansas Nuclear One
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U. S. Nuclear Regulatory Commission
Attn: Mr. Kaly Kalyanam
MS O-8 B1
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Rockville, MD 20852

Attachment to

2CAN051202

Additional Information Related to
Request for Alternative ANO2-ISI-007
Code Case N-770-1 Baseline Examination

ADDITIONAL INFORMATION RELATED TO REQUEST FOR ALTERNATIVE ANO2-ISI-007 CODE CASE N-770-1 BASELINE EXAMINATION

The NRC request is provided below in bold, followed by the response to the request.

1. **The response to Question 5 of the Request for Additional Information (RAI) response states that the coverage limitations are the result of irregular surfaces or tapered surfaces. The staff is concerned by the different coverage which would result from these geometries; intermittent lack of coverage due to irregular weld surfaces is significantly different than a continuous lack of coverage at the root which could result from a tapered weld surface. Please describe the reason for the lack of examination coverage for the susceptible material in each weld and, if due to weld taper, whether the root of the weld is being examined.**

   The examination coverage estimates reported at the time of the ultrasonic examinations indicated a combination of weld surface, joint taper, and cast stainless steel being limitations to coverage. The cast stainless steel portion of the limitation is somewhat quantified by the cross sectional profiles of the weld joint geometry and related thicknesses.

   It should be noted that the scan coverage estimations do not factor in the probe skew of +/- 10 degrees. The probe skew decreases the extent of the actual limitation.

   The limitation due to irregular weld surfaces or weld joint taper was not specifically quantified in the ultrasonic data. The estimated coverage provided considered the net effect of all limitations. However; the coverage estimates and scan plots were reviewed to estimate the volume of susceptible material and circumferential scan coverage of that volume. Table 1 provides the results of the review. The scan plot for each weld is provided after the table.

2. **In Table 1 of the RAI response, the coverage in the circumferential direction is identical for the ferritic material and the susceptible material. Please describe how this is occurs.**

   The ultrasonic examination data sheets did not quantify the exact area or extent of the circumferential scan limitation. The estimated coverage number was applied to both the susceptible material and/or the ferritic material.

   Each of the weld scan plots was reviewed and the susceptible volume estimated. The approximate scan lines were extrapolated and coverage estimates re-calculated for that area only, which is what appears in Table 1 of this submittal.

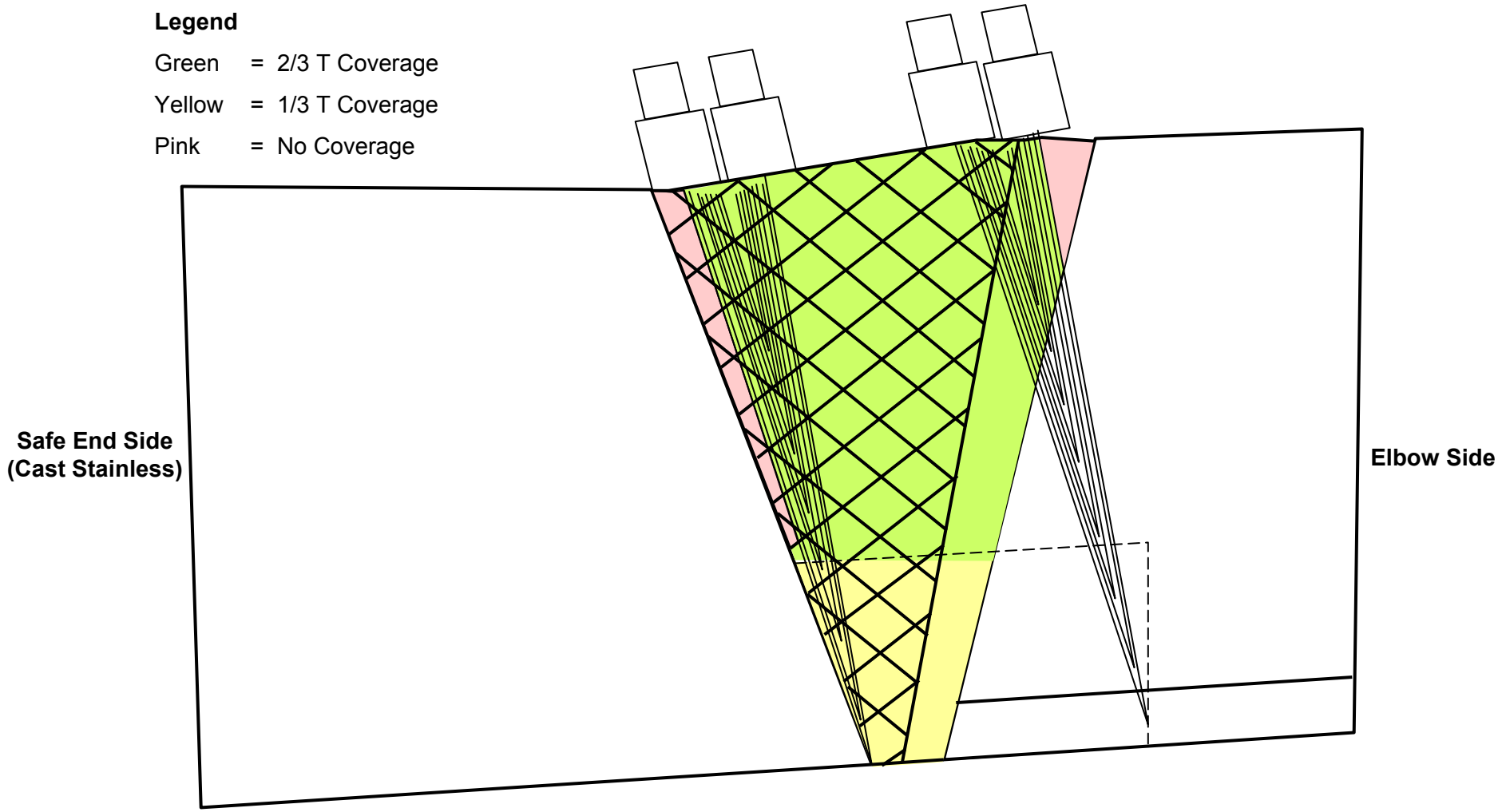
Table 1

Coverage Estimation and Limitations

Component Number	Lower 1/3 Thickness (T) Circumferential Scan Coverage %	Upper 2/3 T Circumferential Scan Coverage %	Sketch Location of Circumferential Coverage Limitation of the Susceptible Material Volume
08-014	100	92	Limitation in upper 2/3 T inconel weld at cast austenitic stainless steel (CASS) bevel preparation area and at cap transition to elbow.
09-008	55	64	Limitation to coverage appears to be concave area near center of weld cap indicating missed scan coverage is in the inconel weld, cap to root.
10-014	14	73	Limitation appears to be from weld taper and indicates the majority of the limitation is in the inconel weld and adjacent butter region with no coverage of weld root area.
11-008	62	73	Limitation to coverage appears to be convex area near center of weld cap indicating missed scan coverage is in the inconel weld, cap to root.
12-014	50	86	Limitation appears to be from weld taper and indicates the majority of the limitation is in the inconel weld with little coverage of weld root area.
13-008	87	85	Limitation to coverage appears to be convex area near the ferritic side of the weld cap indicating missed scan coverage is in the inconel weld with most of the lower 1/3 T examined to the root.
14-014	87	96	Limitation is near the CASS bevel prep area, indicating missed scan coverage cap to root on the safe end side of the weld. Most of lower 1/3 T scanned.
15-008	85	89	Limitation to coverage primarily appears to be convex area near center of weld cap indicating missed scan coverage is in the inconel weld, cap to root.

Arkansas Nuclear One Unit 2 Reactor Coolant Pump Suction Nozzle DMV

DM Weld # 08-014



Arkansas Nuclear One Unit 2 Reactor Coolant Pump Suction Nozzle DMV

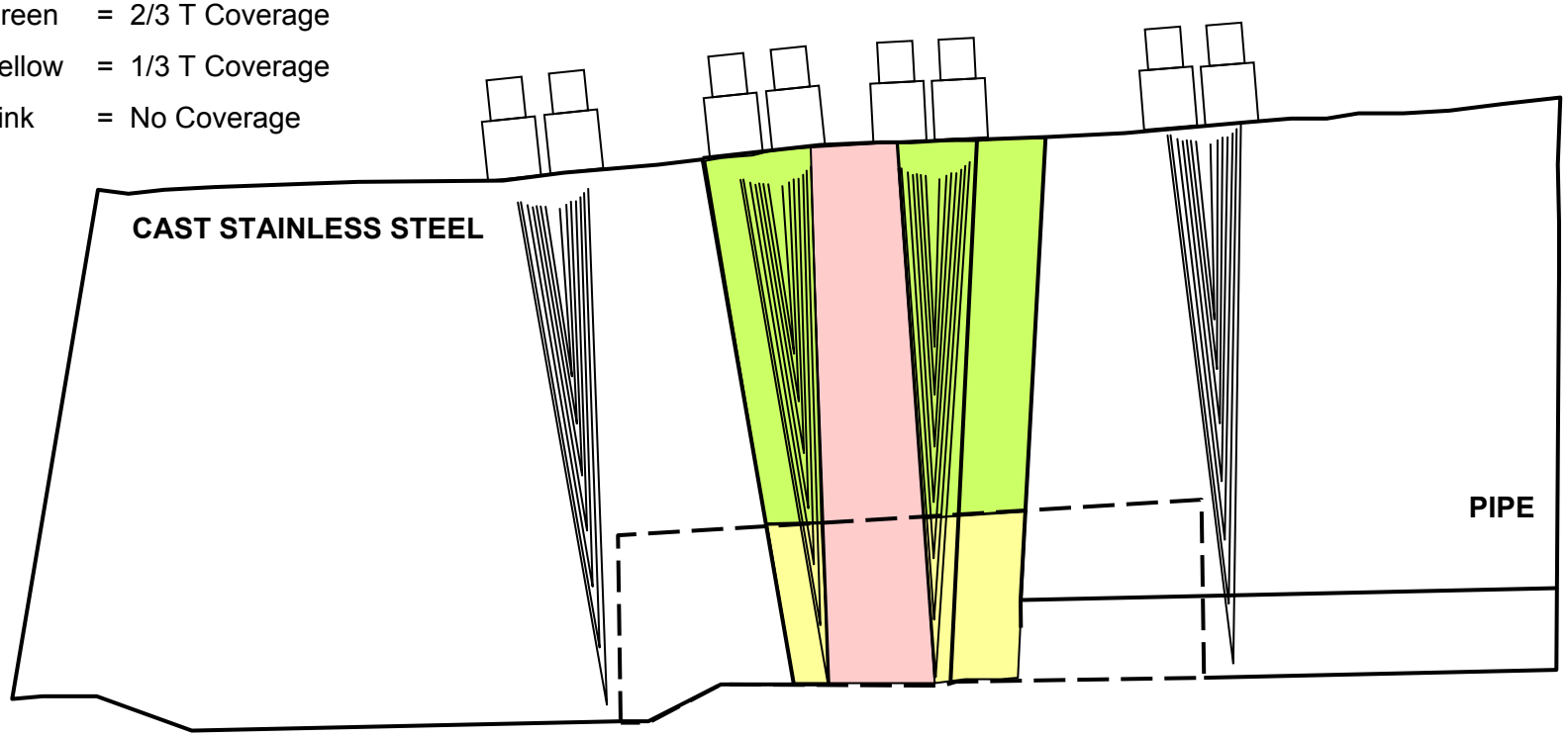
DM Weld # 09-008

Legend

Green = 2/3 T Coverage

Yellow = 1/3 T Coverage

Pink = No Coverage



Arkansas Nuclear One Unit 2 Reactor Coolant Pump Suction Nozzle DMV

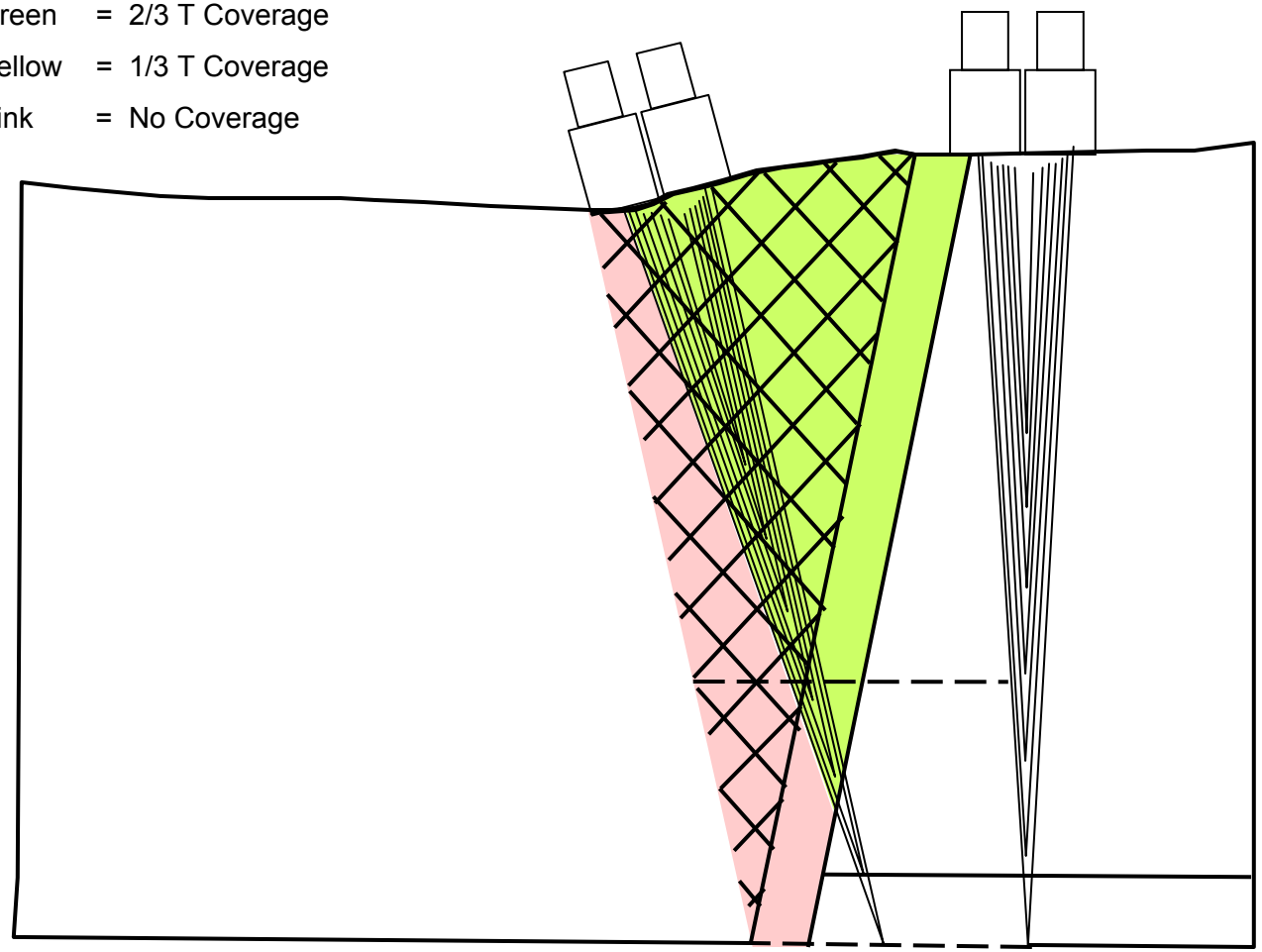
DM Weld # 10-014

Legend

Green = 2/3 T Coverage

Yellow = 1/3 T Coverage

Pink = No Coverage



Safe End Side (Cast Stainless)

Elbow Side

Arkansas Nuclear One Unit 2 Reactor Coolant Pump Suction Nozzle DMV

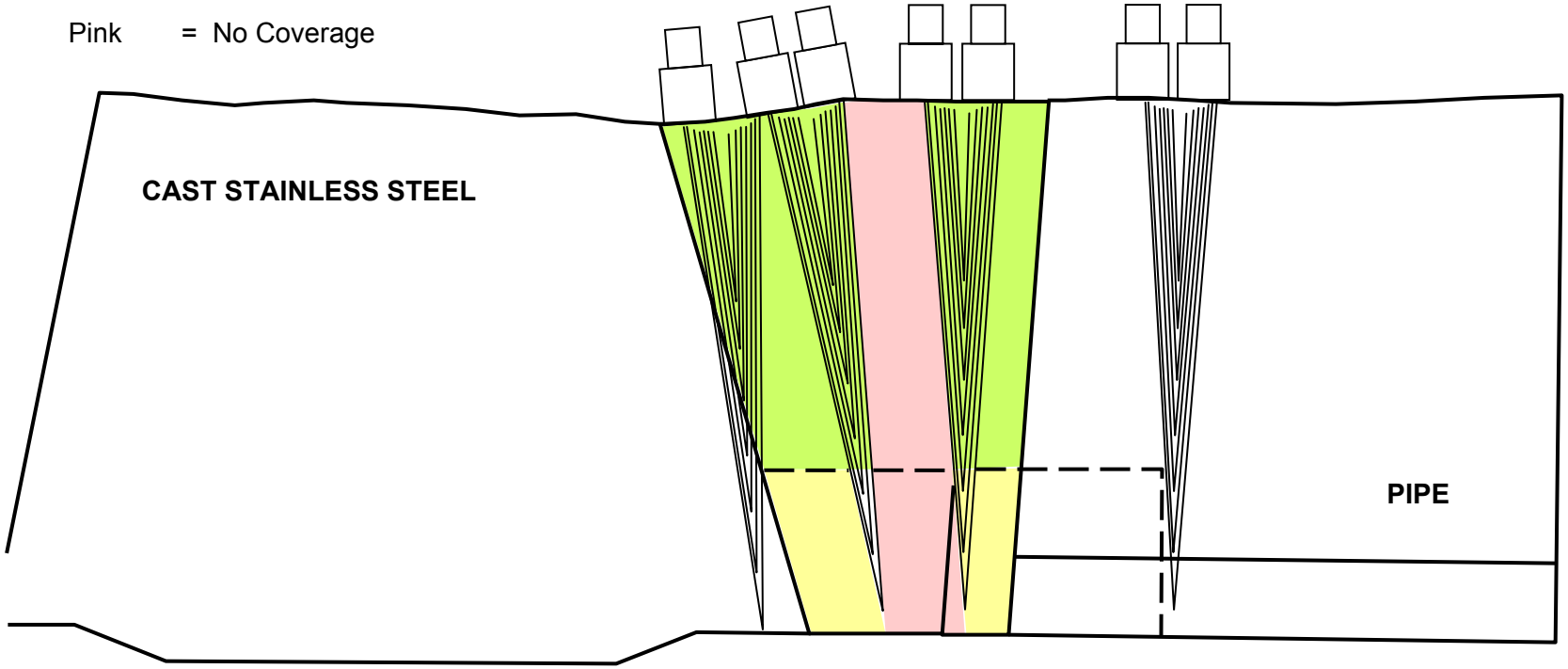
DM Weld # 11-008

Legend

Green = 2/3 T Coverage

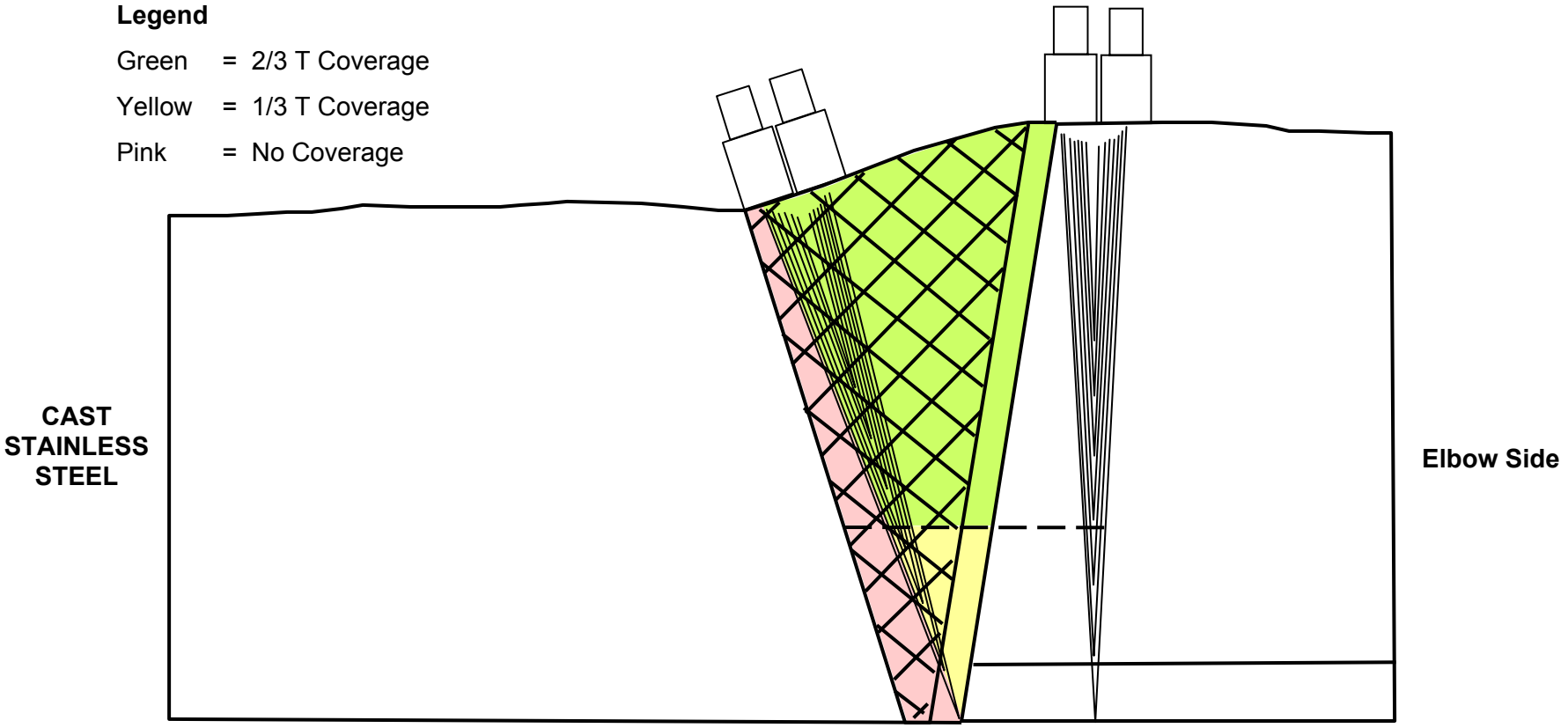
Yellow = 1/3 T Coverage

Pink = No Coverage



Arkansas Nuclear One Unit 2 Reactor Coolant Pump Suction Nozzle DMV

DM Weld # 12-014



Arkansas Nuclear One Unit 2 Reactor Coolant Pump Discharge "A" Nozzle

13-008 / 2P-32C

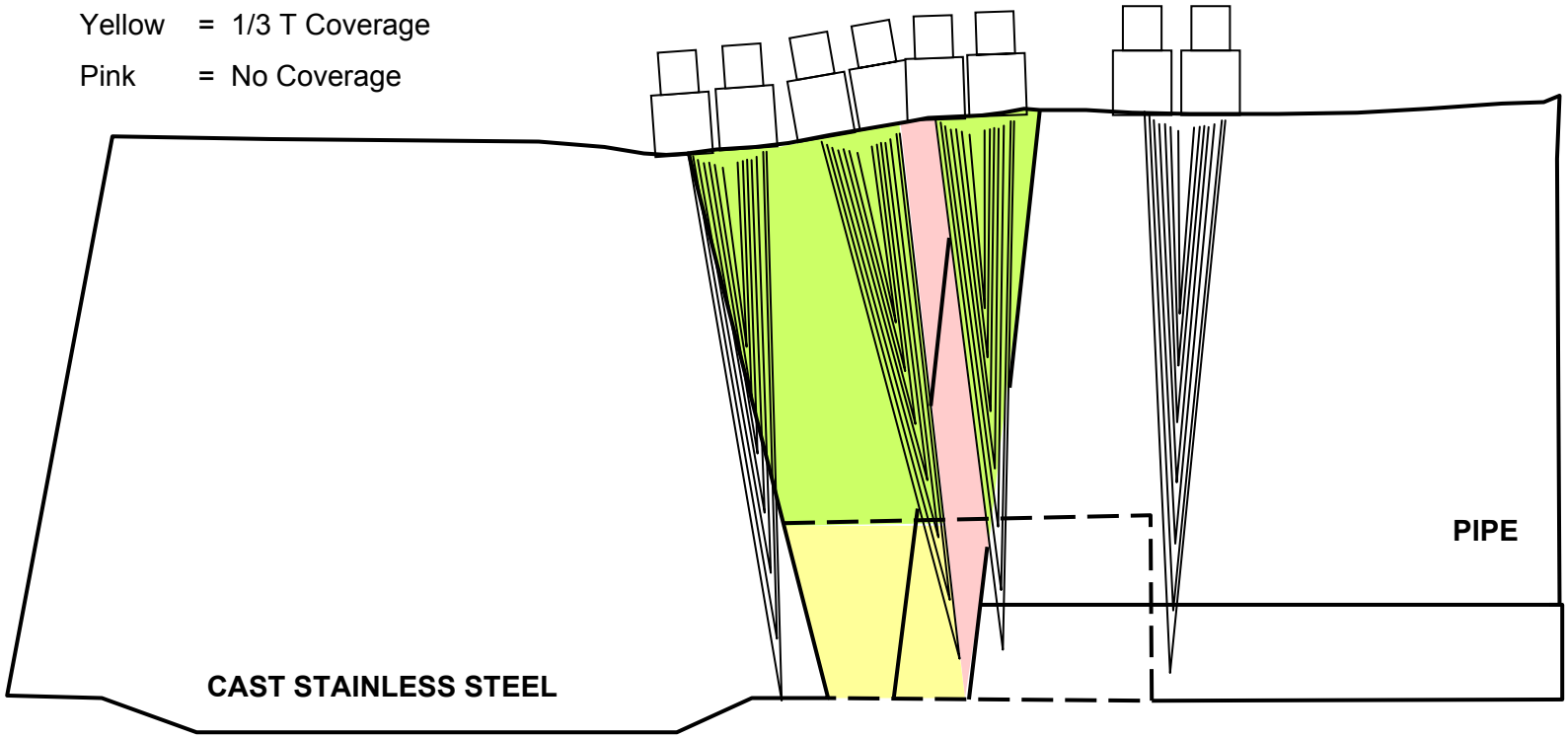
Circumferential Examination Volume

Legend

Green = 2/3 T Coverage

Yellow = 1/3 T Coverage

Pink = No Coverage



Arkansas Nuclear One Unit 2 Reactor Coolant Pump Suction Nozzle DMV

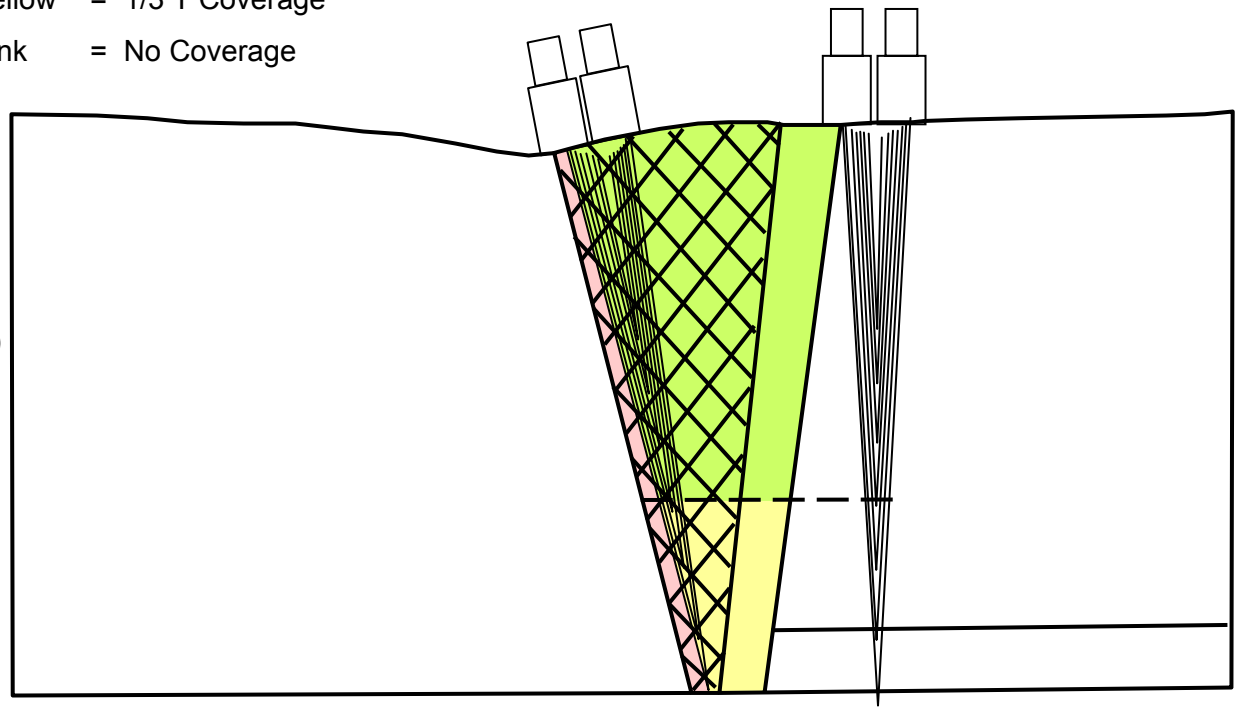
DM Weld # 14-014

Legend

Green = 2/3 T Coverage

Yellow = 1/3 T Coverage

Pink = No Coverage



Safe End Side (Cast Stainless)

Elbow Side

Arkansas Nuclear One Unit 2 Reactor Coolant Pump Suction Nozzle DMV

DM Weld # 15-008

Legend

Green = 2/3 T Coverage

Yellow = 1/3 T Coverage

Pink = No Coverage