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1.10 Conclusions and Recommendations

A summary of the conclusions of the project results are as follows:

- The results showed that if the zonal line scan approach with focused, fixed angle beam and an amplitude-based sizing is used the results will be similar regardless of whether PA or multi-probe is used.

- If the electronic steering, focusing and scanning features of PA are used an improvement in flaw detection and sizing is possible for defects with unknown orientation.

- Data fusion techniques are used to greatly aid in data interpretation.

- UT modeling and simulation tools are very beneficial in ultrasonic technique development and for technique validation purposes.

Recommendations:

- Implementing some of the recent developments in ultrasonic PA inspection technology to significantly improve AUT techniques of girth and repair welds inspection.

- Extend the current zonal approach for AUT of girth weld inspection to non-zonal PA inspection using all PA capabilities such as electronic scanning, focusing, and steering.

- Performing a global AUT qualification on typical bevels instead of project by project AUT systems qualification will significantly reduced the cost and effectiveness of the qualification process.

- Generating and publishing in the open literature statistically valid POD and accuracy of sizing data for typical materials, bevels and welding procedures is recommended.

- Organizing performance demonstration tests for AUT operators is recommended.

1.11 Acknowledgments

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