

ARTICLE REVIEW  
REPORT



# INDIAN STREAMS RESEARCH JOURNAL

International Recognition Multidisciplinary Research Journal

ISSN: 2230-7850 Impact Factor:3.1560 (UIF)

## ORIGINAL ARTICLE

Published:  
1st April, 2015

Vol. -V,  
Issue - III, April, 2015

**APPLICATION OF SIX SIGMA TO  
REDUCE "EXCESS PENETRATION"  
DEFECTS IN GTAW PROCESS OF A  
NUCLEAR PIPING INSTALLATION**

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G. Shanmuga  
Raman

### ABSTRACT

Six Sigma is a powerful business strategy that employs a disciplined approach to tackle process variability using the application of statistical and non-statistical tools and techniques in a rigorous manner. This paper explains the implementation of Six Sigma for reduction of GTAW defect "Excess Penetration" (EP) in the nuclear piping facility of a nuclear research organization in India. The study aimed at verifying the applicability of Six Sigma in a non-mass manufacturing process like GTAW of ss pipes.

### Article Indexed in



Correspondence to **G. Shanmuga Raman and B.Venkatraman**  
Designation:- **Department of Horticulture, Sikkim University.**

### Introduction

This study is an initiative to implement the Six Sigma DMAIC approach in a nuclear plant for reducing 'Extra Penetration' defects in the GTAW (Gas tungsten Arc welding) process of ss piping facility.

#### A Good Introduction :-

*Importance of the expected results to the general inq Extremely briefly depict the exploratory configuration and how it achieved the expressed destinations.*

### Materials

Must add materials in your article .

#### A Good Materials :-

*Materials may be accounted for in a different passage or else they may be distinguished alongside your systems. Inc or supplies that are not generally found in research centers.*

### Result

Must add result in your article.

#### A Good Result :-

*Results are as per aims and objective and useful to further research .*

### Conclusion

This paper has presented the phase-by-phase implementation of the DMAIC methodology in GTAW at the SS piping facility of a nuclear research organization for their demonstration plant for reducing 'Extra of Penetration' (EP) defects. The outcome of the study confirms the suitability of Six Sigma and its DMAIC methodology in a non-continuous and non-repetitive activity like GTAW process.

#### A Good Conclusion :-

*Thus, the research have wider scope for new academician and research scholars.*

### References

- Andersson, R., Eriksson, H. and Torstensson, H. (2006), "Similarities and differences between TQM, Six Sigma and lean", The TQM Magazine, Vol. 18 No. 3, pp. 282-96.
- Gholap, P.C. and Desai, T.N. (2012) 'Reduction of rework the Six Sigma way: case study of an Indian small scale industry', Int. J. Six Sigma and Competitive Advantage, Vol. 7, No. 1, pp.92–116.
- Harry, M. J; Schroder, R; (2000), "Six Sigma; The Breakthrough Management Strategy revolutionizing the world's top Corporations", Doubleday, New York ebsco.org/gtaw
- <https://www.nde-ed.org/EducationResources/CommunityCollege/Radiography/TechCalibrations/RadiographInterp.htm>

#### A Good References :-

*There are Places where the Author G. Shanmuga Raman and B. Venkatraman Need to Cite a Reference, but Have Not*

**SUMMARY OF ARTICLE**

No.		Very High	High	Average	Low	Very Low
1.	Interest of the topic to the readers	✓				
2.	Originally & Novelty of the ideas		✓			
3.	Importance of the proposed ideas		✓			
4.	Timelines			✓		
5.	Sufficient information to support the assertions made & conclusion drawn	✓				
6.	Quality of writing (Organization, Clarity, Accuracy Grammer)	✓				
7.	References & Citation (Up-to-date, Appropriate Sufficient)					

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### REVIEWER COMMENTS

- The presentation is pertinent and hypothesis based.
- Sufficient data about the past study discoveries is displayed for perusers to take after the present study method of reasoning and strategies.

Authorized Signature

**Dr. Ashok Yakkaldevi**  
Review Editor

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Ph.: 0217-2372010 / +91-9595-359-435  
Email.: ayisrj2011@gmail.com  
Website.: www.isrj.org