	Mode	Frequency [Hz]
1	1.	592.99
2	2.	625.03
3	3.	851.01
4	4.	1069.3
5	5.	1075.1
6	6.	1176.8

Figure 10: Natural frequencies

5. Conclusion

In this paper the centrifugal pump casing was designed and modeled for specific requirements as per the American petroleum Institute (A.P.I.) and American Society of Mechanical Engineers (A.S.M.E.) standards and undergone as structural and seismic analysis in ANSYS. By considering the results obtained from structural analysis, as maximum Equivalent stress developed (540.94 Mpa) is less than yield strength (676 Mpa) of casing material, it is predicted that the designed casing is reliable and safe for maximum allowable working pressure and temperature. For seismic condition the data for modal analysis, such as effective mass were used to determine natural frequencies of the model. As the obtained minimum natural frequency (592.99 Hz) is far away from the standard Earthquakes wave frequency (33 Hz) and blade passing frequency (350 Hz), the casing is safe for seismic condition as per American petroleum Institute (A.P.I.) standards. As the maximum equivalent stresses are developed near the tongue. So by considering more safety of casing the required geometrical modification should be done at the tongue.

6. Future Scope

The topic of this work is design and analysis of centrifugal pump casing. In this paper the Centrifugal pump which is used as boiler feed pump in Nuclear power stations. So this report gives further future scope to those companies that are interested in the world market for manufacturing of centrifugal pumps with detailed design and analysis information on its present status and future development for hazardous area applications like nuclear power stations. Emphasis has been placed on providing to the reader with the latest available information on how the maximum allowable working pressure and temperature affect on the pump casing in the nuclear station and what are the possible geometrical modification would be applied on initial model by considering seismic conditions. This report is ideal for analyzing the centrifugal pump casings reliability and capability and predicting its life.

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