TABLE IV
ACCURACY OF RAINFALL FORECAST DATA

No.	Item	Value
1.	No. of correct forecast	89
2.	Total no. of forecast	182
3.	Accuracy of rainfall forecast data application	48.90%

As seen in Table IV, the accuracy of rainfall forecast data is a fair 48.90%.

IV. CONCLUSION AND FUTURE WORK

In conclusion, it is clear that applying rainfall forecast data yield positive return, in terms of increase in annual energy production and projected annual spillage reduction to pondage hydropower plant. Besides, the water release decision derived from rainfall forecast data proves to be fairly successful in reducing spillage.

However, a fair accuracy of rainfall forecast data limits the scale of improvement in annual energy production and projected annual spillage reduction.

To improve the accuracy of incoming water flow, detailed rainfall-runoff modeling of the catchment area shall be conducted for streamflow prediction [5, 6, 7]. This shall then be translated into more reliable, more accurate and greater improvements in both annual energy production and spillage reduction.

REFERENCES

[1] R. K. Rajput, *Power System Engineering*. New Delhi: Laxmi Publications (P) Ltd, 2006, p. 109.

[2] M. Majumder, and S. Ghosh, *Decision Making Algorithms for Hydro-Power Plant Location*. Singapore: Springer, 2013, p. 16. http://dx.doi.org/10.1007/978-981-4451-63-5

[3] M. M. Naqvi, *Design of Linear Drainage Systems*. London: Thomas Telford Publishing, 2003, p. 5. http://dx.doi.org/10.1680/dolds.32224

[4] C. C. Warnick, *Hydropower Engineering*. Englewood Cliffs, NJ: Prentice-Hall, 1984, p. 29.

[5] P. J. Dye, and B. F. W. Croke, “Evaluation of streamflow predictions by the IHACRES rainfall-runoff model in two South African catchments,” Environmental Modeling & Software J., vol. 18, no. 8-9, pp. 705-712, 2003. http://dx.doi.org/10.1016/S1364-8152(03)00072-0

[6] D. I. Jeong, and Y. O. Kim, “Rainfall-runoff models using artificial neural networks for ensemble streamflow prediction,” Hydrological Processes J., vol. 19, no. 19, pp. 3819-3835, Dec. 2005. http://dx.doi.org/10.1002/hyp.5983

[7] E. Wang, Y. Zhang, J. Luo, F. H. S. Chiew, and Q. J. Wang, “Monthly and seasonal streamflow forecasts using rainfall-runoff modeling and historical weather data,” Water Resources Research J., vol. 47, no. 5, May 2011.