CERTIFICATION OF SELECTED STATISTICAL METHOD FOR
GROUNDWATER MONITORING DATA EVALUATION
IPL EAGLE VALLEY GENERATING STATION
ASH PONDS A, B, AND C

ATC Group Services LLC ("Consultant") has been retained by Indianapolis Power & Light Company (IPL) to prepare a narrative description of the statistical method that will be used to evaluate groundwater quality data from the multiunit detection monitoring system installed at IPL's Eagle Valley Generating Stations Ash Pond A, B, and C to comply with 40 CFR § 257.91. A certification that the selected statistical method is appropriate for evaluating the groundwater monitoring data is also included below.

1.0   NARRATIVE DESCRIPTION OF STATISTICAL METHOD

Pursuant to 40 CFR § 257.90(b), owners and operators of new and existing CCR landfills, and new and existing CCR surface impoundments, and all lateral expansions of a CCR unit must install a groundwater monitoring system and begin evaluating groundwater quality data for statistically significant increases over background levels. 40 CFR § 257.93(f) requires owners and operators of a CCR unit to select one of the following statistical methods to be used in evaluating groundwater quality data:

1.   A parametric analysis of variance followed by multiple comparison procedures
2.   An analysis of variance based on ranks followed by multiple comparison procedures
3.   A tolerance or prediction interval procedure
4.   A control chart approach
5.   Another statistical test method

The selected statistical test method must meet the performance standard in 40 CFR § 257.93(g).

Pursuant to 40 CFR 257.93(f), a prediction interval procedure will be used to evaluate groundwater quality at this multiunit system that includes Ash Ponds A, B, and C. A prediction interval will be computed using background data for each detection monitoring constituent listed in Appendix III to 40 CFR Part 257. Background data will be based on background well designations described in IPL's *Eagle Valley Generating Station Ash Pond System Closure & Post-Closure Plan*. Background data will be screened for outliers and tested for distributional assumptions. Prediction limits will be based on the number of samples in the background database and will account for data reported below the limit of detection. Computed prediction intervals will account for multiple comparisons and verification resampling procedures. The method will compare concentrations measured in downgradient wells at the waste boundary to prediction limits determined from concentrations in designated upgradient wells. Prediction limits will be updated at each compliance monitoring event and when upgradient well designations are modified.
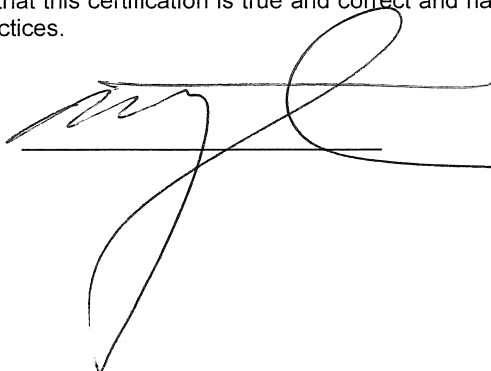
2.0   LIMITATIONS

The signature of Consultant's authorized representative on this document represents that to the best of Consultant's knowledge, information, and belief in the exercise of its professional judgment, it is Consultant's professional opinion that the aforementioned information is accurate as of the date of such signature. Any opinion or decisions by Consultant are made on the basis of Consultant's experience, qualifications, and professional judgment and are not to be construed as warranties or guaranties. In addition, opinions relating to environmental, geologic, and geotechnical conditions or other estimates are based on available data and geologic and hydrogeologic investigation performed by others. Actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

3.0   CERTIFICATION

I, Martin Brungard, being a Registered Professional Engineer, in accordance with the Indiana Professional Engineer's Registration, do hereby certify to the best of my knowledge, information, and belief, that the statistical method is appropriate for the CCR unit that is the subject of this certification dated October 17, 2017, meets the performance standard of 40 CFR § 257.93(g), and that this certification is true and correct and has been prepared in accordance with generally accepted good engineering practices.

SIGNATURE _____   DATE ___10/17/17___

Rev.0