

V.H

PJM DESIGN AND APPLICATION OF INSTRUMENT TRANSFORMERS

1.0 SPECIFICATION

- 1.1. As a minimum requirement, all instrument transformers should be specified to meet or exceed the requirements of all applicable industry standards, including but not limited to ANSI, IEEE, NEMA and ASTM.
- 1.2. Instrument transformers are classified as either current transformers or voltage transformers.
- 1.3. Instrument transformers must be designed with adequate electrical, dimensional, mechanical and safety characteristics for the specific electrical system on which they are installed and for the application for which they are intended.
- 1.4. Instrument transformers should be suitable for the usual service conditions as identified by the applicable standards. Any unusual service conditions should be identified and considered for specific applications. These may include ambient temperature, high altitude, contamination, space or ventilation restrictions, or unusual duty requirements.

2.0 APPLICATION

- 2.1. Instrument transformers should be utilized in applications for which they were designed.
- 2.2. Instrument transformers used in switchgear assemblies, power circuit breakers, power transformers or outdoor bushings should be suitable for those applications.

3.0 RATINGS

- 3.1. Instrument transformer ratings should be suitable for the metering or relaying application for which they are intended.
- 3.2. These ratings include, but are not limited to: Basic impulse insulation level (BIL), nominal system voltage, maximum system voltage, frequency, rated primary and secondary currents, rated primary voltage and ratio, accuracy classes at standard burdens, continuous thermal rating factor at 30°C ambient, and short time mechanical and thermal current ratings.
- 3.3. Normal and emergency ratings of current transformers should be determined by using the PJM TSDS guide "Determination of Current Transformer Ratings" latest revision.

3.4. The following minimum ratings apply for use on the PJM system:

3.4.1.	Nominal voltage	230KV	500KV
3.4.2.	Maximum voltage	242KV	550KV
3.4.3.	BIL	900KV	1675KV, 1800kV
3.4.4.	Frequency	60Hz	60Hz

3.4.5. Current Transformers:

3.4.5.1. Primary: secondary ratio Multi-ratio, as required.

3.4.5.1.1.1.	Accuracy class	C800	C800
3.4.5.1.1.2.	Secondary thermal overload	1.5	1.5

3.4.6.	Voltage Transformers (line to ground application):		
3.4.6.1.1.1.	Rated primary voltage	138KV	287KV
3.4.6.1.1.2.	Ratio	1200/2000:1	2500/4500:1
3.4.6.1.1.3.	Accuracy	0.3	0.3
3.4.6.1.1.4.	Burden	W thru ZZ	W thru ZZ

4.0 MAINTENANCE

4.1. See Section V.L.2.H for maintenance requirements.