

State Grid Electrical Power Research Institute, China	Basic design of a new High Power Testing Laboratory	2011-2012	*
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Testing Facilities and maximum ratings of equipment to be tested

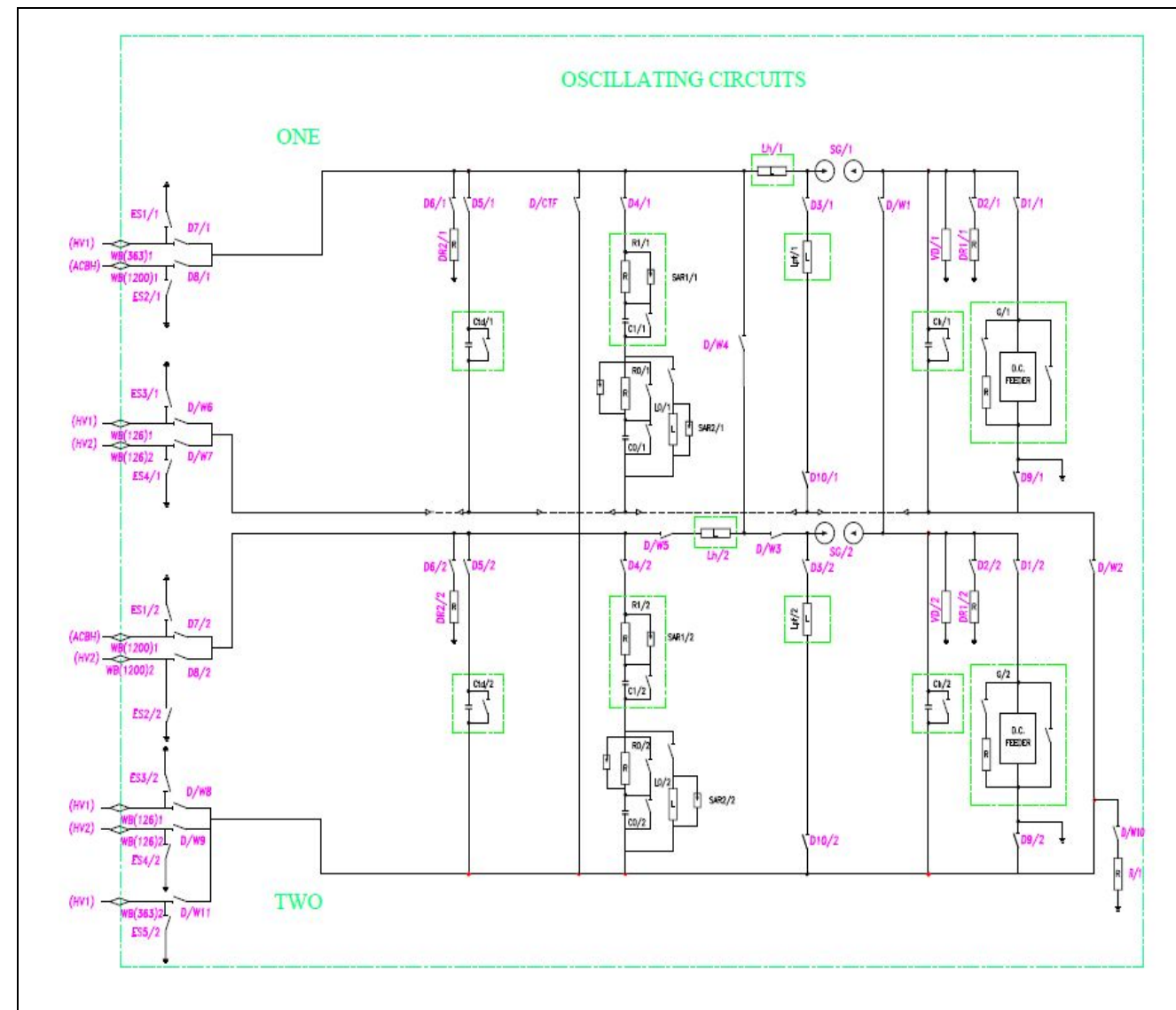
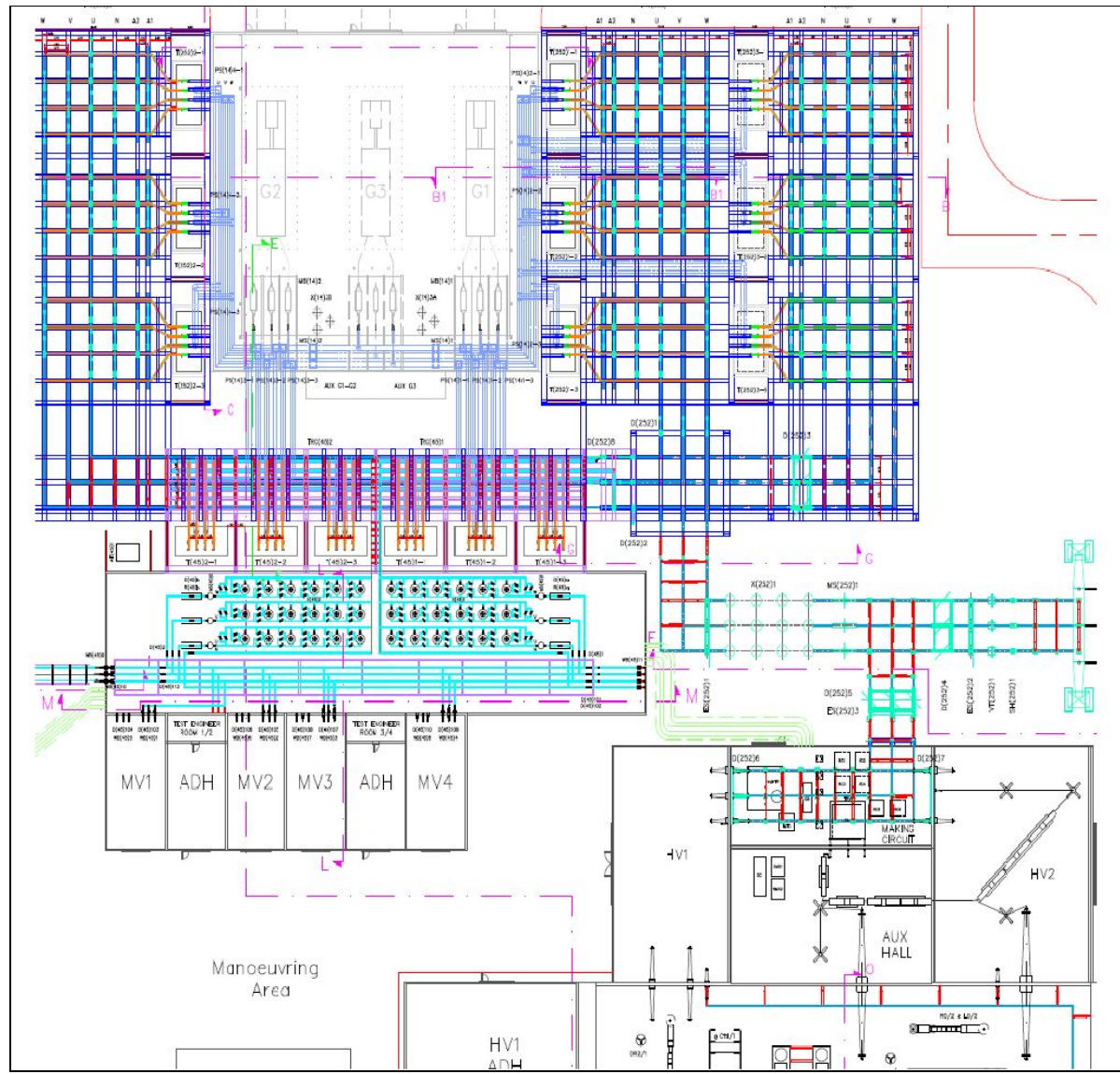
The High Power Testing Laboratory, is a new section of the State Grid Inspection & Testing Center in Changzou which already includes a AC/DC High Voltage Test Hall and an Environment and Mechanical Test Hall.

The High Power Testing Laboratory, supplied by a multi-generator group (two 3200 MVA generators with provisions to add a third generator in future) and a HV substation fed from the 220 kV network, includes the following testing facilities:

- Synthetic Laboratory, to perform on Circuit-breakers:
 - Synthetic Tests with the following max capabilities:
 - 1200 kV rated voltage and 100 kA (1-phase) short circuit current (1-phase),
 - 363 kV rated voltage and 80 kA (3-phase),
 - Direct Tests up to 252 kV, 80 kA (3- phase),
- Medium Voltage Laboratory for Direct Tests on MV Switchgear and Controlgear with rated voltage up to 40.5kV and short-circuit current up to 63kA,
- Short Time Current Laboratory for tests on HV Disconnectors, HV GIS, MV & HV GIS, MV & HV surge arresters with short time current up to 150 kA,
- High Power Transformers Laboratory, for short-circuit withstand tests on transformers (either three-phase or single-phase units) up to 160 MVA, 220 kV.

Tasks performed:

<p><u>Basic Specification for HV Direct and Synthetic tests:</u></p> <ul style="list-style-type: none"> ● Three phase synthetic circuits conceptual design, ● Oscillating Circuits, ● Current Circuit for synthetic and direct testing, ● Review of making and breaking in three phase synthetic circuits, ● Testing capabilities evaluation for synthetic and direct testing, ● Testing circuit schemes for synthetic and direct testing, ● Calculation of circuit parameters for synthetic and direct testing, ● List of the main testing equipment and relevant main ratings, 	<p><u>Basic Specification of Medium Voltage Laboratory:</u></p> <ul style="list-style-type: none"> ● Laboratory feeder from Short-circuit Generators group and from HV Network, ● Testing capabilities evaluation, ● List of the main testing equipment and relevant main ratings, ● Basic specification of: <ul style="list-style-type: none"> ● Short-Circuit Generators, ● MV/MV Short-Circuit Transformers bank, ● MV/HV Short-Circuit Transformers bank, ● HV/MV Short-Circuit Transformers bank.
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* as CESI subcontractor