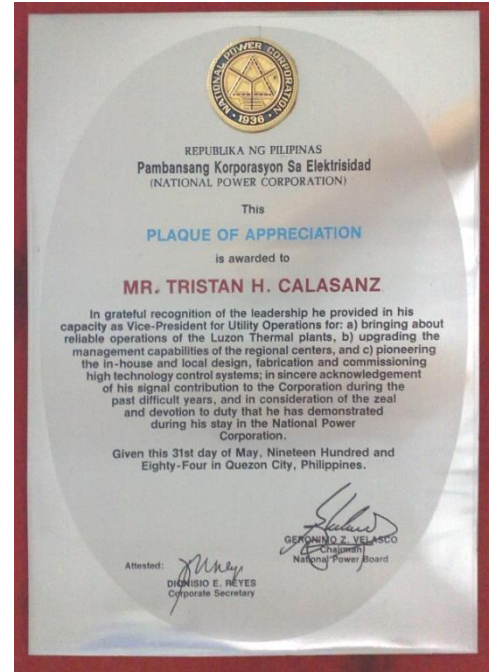


TRISTAN H. CALASANZ
BSME, BSEE, Associate Lecturer (ret)
<http://www.thcal.com>

- A] **Built from "scratch" a High Voltage Automation System to control two remote unmanned 138-kV Substations from one location.**
- B] **Commissioned in two days a high voltage, high power thyristor-based Automatic Generator Control for a 150-mW steam power plant after 10 years of unsuccessful attempts by contractor.**
- C] **Designed and Built Prototype: Hybrid-Electric Vehicle from Design to Implementation**
<https://www.youtube.com/watch?v=nvJ4NhUYr2U>
<http://tristanhybrid.blogspot.com>
- D] **Five-Year Research to yield a prototype Braille System allowing five blind persons to simultaneously use ONE mid-range Personal Computer to access the internet, using easy-to-build hardware attached to the PC printer port.**
<http://braille.thcal.com> or <http://ultrabraille.blogspot.com>
- E] **"Adviser on Electronics" for Research Thesis Projects of Computer Engineering, and Electronics and Communications Engineering Students.**



Some Highlights Include:

- Featured Thesis Projects in a Full-Blown AI-House (http://www.thcalasanz.com/thcal/21s_ce150_00.html)
- Adviser: Power Electronics, Computer Interfacing, Analog and Digital Controls
- Academics Page: <http://www.thcalasanz.com/thcal/default.html>
- Design, Fabrication, and Commissioning of a Supervisory Control and Data Acquisition (SCADA) System for a simulated factory at the premises of the School of Science and Engineering, Ateneo de Manila University.

F] **Power/Energy, Technical and Corporate Management** (Accomplished a turn-around in Operations nationwide in three years, as Vice-President for Utility Operations of the National Power Corporation of the Philippines. Equivalent gross income of US\$1 billion in 1983 on operating assets in excess of US\$10 billion; Energy-Efficiency projects generated the equivalent of US\$15 million savings in 1983)

G] **Other Positions Held:**

- Vice President for Project Development
- Vice President for Power Utility Operations
- Vice President for Human Resources
- Chairman, Energy Committee of the Philippine Chamber of Commerce and Industry
- Head, Human Resources Development Division
- Chief, Nuclear Plant Systems Division
- Chief, Nuclear Training Section
- Nuclear Instrumentation Technologist, 3-mW(thermal) Nuclear Research Reactor

H] **Engineering Degrees - Mapua Institute of Technology, Philippines**

Jul 1, 1956 - Bachelor of Science, Mechanical Engineering (Academic Scholar)

- Placed Fifth in the Government's National Board Examinations for Mechanical Engineers

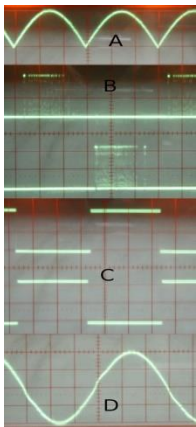
Jan 31, 1958 - Bachelor of Science, Electrical Engineering (Academic Scholar)

- Graduated recipient of Silver Medal of Honor
- Placed First in the Government's National Board Examinations for Electrical Engineers

DETAILS FOLLOW . . .

Snapshots of Skills.

- I read Schematic Diagrams, at sight, like a novel.
 - I am able to break down the functions and explain them right away.
 - I am also able to draw the waveforms at nodes.
 - I very seldom need a circuit description of analog schematics.
 - I may need schematics of analog and digital IC's if they are not indicated in the schematics themselves.
 - In some cases, I may also need their "datasheets." (They are normally downloadable.)
 - I used this skill to commission the Automatic Generation Control (AGC) of the 150-mW steam power plant unit that the Contractor could not commission over a span of ten years. I was then the Vice President for Utility Operations for the National Power Corporation of the Philippines.
- I am an expert trouble-shooter.
 - I am able to introduce signals like voltages and waveforms, resistances, capacitances, etc., of the proper values to produce expected circuit behavior, and compare this with what the circuit is designed for.
 - I am able to completely remove a circuit component that may not be available at the stockroom and redesign a replacement circuit to be soldered to input and output nodes. Of course, we know that this method would not work with very high frequency systems, or very fast rising and/or falling edges.



- I am able to conduct these activities because I design circuits myself. Some examples are:
 - A sinusoidal power 3-phase variable frequency, variable voltage INVERTER, with current limiters. I use IGBT's for the Inverter's power stages. I am not limited to 3-phase or 120-degree vectors. It can be any DC voltage source, any frequency, any vector, and any voltage output. This VFI device possesses the capability of standing alone, and of receiving "set-point" commands from a laptop computer, from a PLC, or from another source.
 - I also built a charger for my Hybrid-Electric Vehicle prototype. This device also possessed the capability of standing alone, and of receiving "set-point" signals.
 - In 1979, I tore down the charger of a Renault Electric Sedan, owned by the President of the Philippines, and completely replaced it with my own design using thyristors. I included a feature that allowed it to be plugged into the grid indefinitely, as my new system had its own charging algorithm. I discarded all of its original components, except its charging cable to the power socket.
- My control programs are written in low level Assembly and/or C-language to be able to fulfill the control functions that are needed by my designs.
- The BEST way to assess my skills is to call me over and give me "schematic diagrams" and circuit boards to analyze.
- I have brought my students at the School of Science and Engineering of the Ateneo de Manila University to enviable levels of motivation and innovation through my skills and my own teaching methodology. My methodology earned me the Engineering "Dean's Award for Teaching Innovation." My effectiveness was recognized by the "Ateneo Schools Parents Advisory Council" with an "Outstanding Part-Time Faculty Award."