

Syntha

Introducing
Syntha[®] 2000
Thermal Analysis Software



Modeling your solution –
supporting your decision.

Syntha Corporation

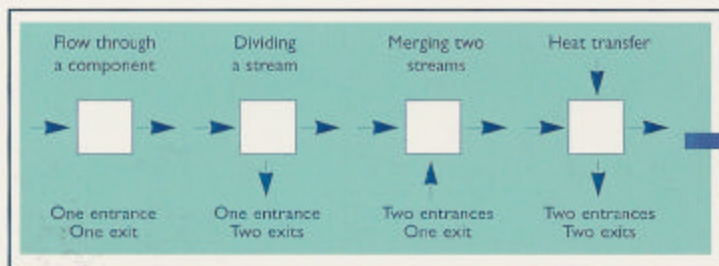
A leader in the development of thermal analysis software, Syntha Corporation has over 30 years of success supporting customers in the USA and abroad. Hundreds of power generation plants — fossil, nuclear, combined cycle, gas turbine and steam — have benefited from Syntha's optimizing models.

Since its inception, it has been Syntha's objective to help engineers meet their challenges with powerful, flexible and cost-effective technology that works in the real world. From new plant design to studying the thermal implications of maintenance or evaluating methods for increasing capacity, Syntha continues to be the choice of engineers who expect more than sophisticated models — they demand to see a return on their investment.

Syntha® 2000 thermal analysis software is an intelligent, Windows™-based package designed as a means to your end. It is an efficient tool that supports your decision-making process and allows you to choose the best alternatives with confidence.

Complete Support

Syntha Corporation stands behind Syntha 2000 — and that means making it work for your needs, by your people. We provide the training you need to be able to use our software to develop your own solutions, the technical support to back you up during the

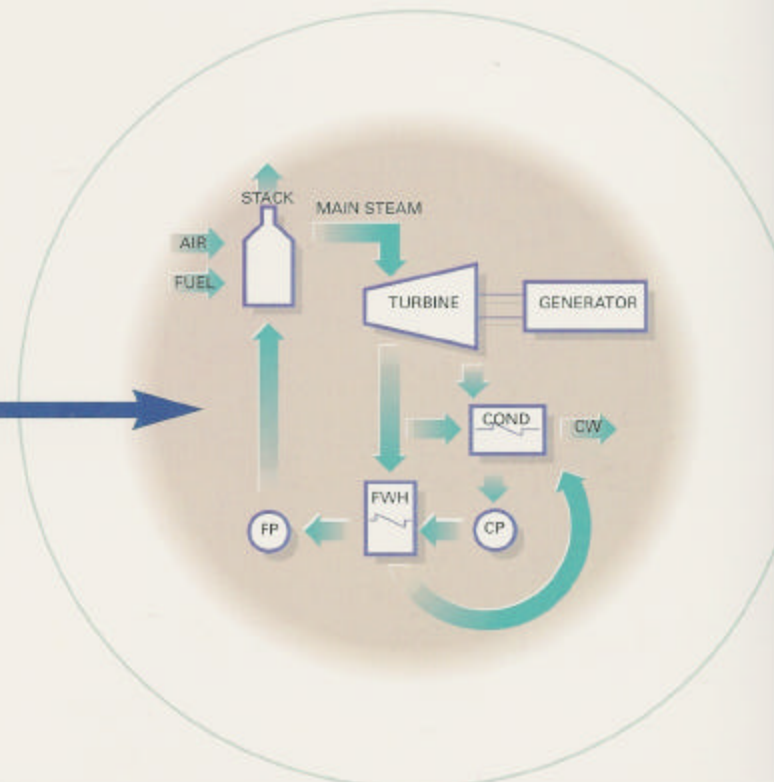


Syntha 2000's functional modeling components allow you to model virtually any equipment or subsystem.



process, and the consulting services you might require to expand your in-house resources. But our ultimate goal remains to make you the real expert on your Syntha software. *The choice for real life challenges by real life engineers, Syntha 2000 offers flexibility and ease of use.*

Technical support can include assistance in setting up a model, determining methods to be used for a modeling situation, or the diagnosis of a "Limit" solution. Formal training can range from in-house sessions, developed and delivered to fit the knowledge and requirements of a specific client, to open-seating seminars attended by several Syntha clients. In some cases, optional consulting services allow you to take fuller advantage of Syntha 2000.



Syntha 2000 at Work for You

What is your ultimate objective when you choose Syntha 2000 software? To control and reduce cost? To increase uptime or capacity? To optimize efficiency? Syntha can help empower you, giving you maximum modeling and operating versatility and allowing you to develop the best solution. Syntha 2000 works for you in the real world, solving real problems, letting you take advantage of real opportunities. Its uniquely



efficient concept allows you to model fossil, nuclear, gas, heat recovery and combustion systems with one software package and permits almost any cycle arrangement, combination of equipment, or integration of systems.

Syntha 2000 permits both gas and steam/water flow paths in the same model, allowing boilers and turbines to be coupled to evaluate the entire power cycle.

A Syntha model is a mathematical representation of the physical and performance data of a power plant. Models can be used for designing a new plant or for evaluating an existing one. The steps to building a Syntha model are straightforward — gathering data, constructing the schematic diagram, constructing the model, validating the model, and generating solutions. Syntha calculates the properties of flow paths and the performance of components in the model. By combining, or “synthesizing,” the results, the overall system performance can be established.

An “Intelligent” modeling tool, Syntha 2000 solves models within the confines of the First and Second Laws of Thermodynamics and the program’s convergence criteria. What if thermodynamic violations occur, or convergence cannot be achieved? Syntha 2000 uses the closest valid data based on established engineering practices, and identifies which flow streams and components cause the limits and by how much. Whichever the case, Syntha 2000 provides intelligent responses to your data.

Plant engineers and operators can use Syntha models to design a new plant, to study the thermal implications of maintenance activities, or to evaluate methods to increase capacity or reduce heat rate.

What is the Syntha 2000 Difference?

Syntha 2000 has the industry’s most powerful and reliable foundation, incorporating more experience and allowing more user flexibility than simpler programs. An advanced heat balance tool that can model practically any kind of steam or gas power plant, Syntha doesn’t limit you to predefined cycles using standard templates — it treats each model as unique.



What's the Return on Your Investment in Syntha 2000?

Your return on investment is reliable, cost-effective power plant operation. Syntha clients have frequently reported payback periods as short as three weeks when using Syntha 2000 as a decision support tool for deferring or accelerating maintenance. Equally rapid returns have been seen for capital improvement decision-making based on Syntha modeling.

Some Typical Applications of Syntha 2000

PLANT DESIGN:

- PREDICTING THE EFFECT OF AIR, CIRCULATING WATER TEMPERATURE AND OTHER ENVIRONMENTAL CONDITIONS.
- ESTABLISHING OPERATING LIMITS FOR PLACING EQUIPMENT IN OR OUT OF SERVICE.
- COMPARING ACTUAL AND EXPECTED OPERATING PARAMETERS AT PART LOAD CONDITIONS TO ENSURE EFFECTIVE AND STABLE LOW LOAD OPERATION.

TEST EVALUATION:

- TESTING FOR EQUIPMENT GUARANTEES UP TO, AND INCLUDING, TESTS THAT COMPLY WITH FULL-SCALE ASME POWER TEST CODES.
- MONITORING THE CONDITION AND PERFORMANCE OF PLANT EQUIPMENT.

ON-GOING PERFORMANCE ANALYSIS:

- DETERMINING BENEFITS AND PENALTIES OF ALTERNATIVE OPERATING MODES.
- UNDERSTANDING THE EFFECTS OF FOSSIL FUEL CHANGES.
- EVALUATING AND JUSTIFYING MAINTENANCE ACTIONS.

Optimizing **uptime** is
only a phone call away.

Find out how Syntha 2000 can
help you **achieve** your
goals, efficiently and
cost-effectively.

Call us today.

The logo for Syntha Corporation, featuring the word "Syntha" in a bold, italicized, sans-serif font. The letters are white with a thick blue outline, set against a dark blue background that is part of a large triangular graphic on the left side of the page.

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