



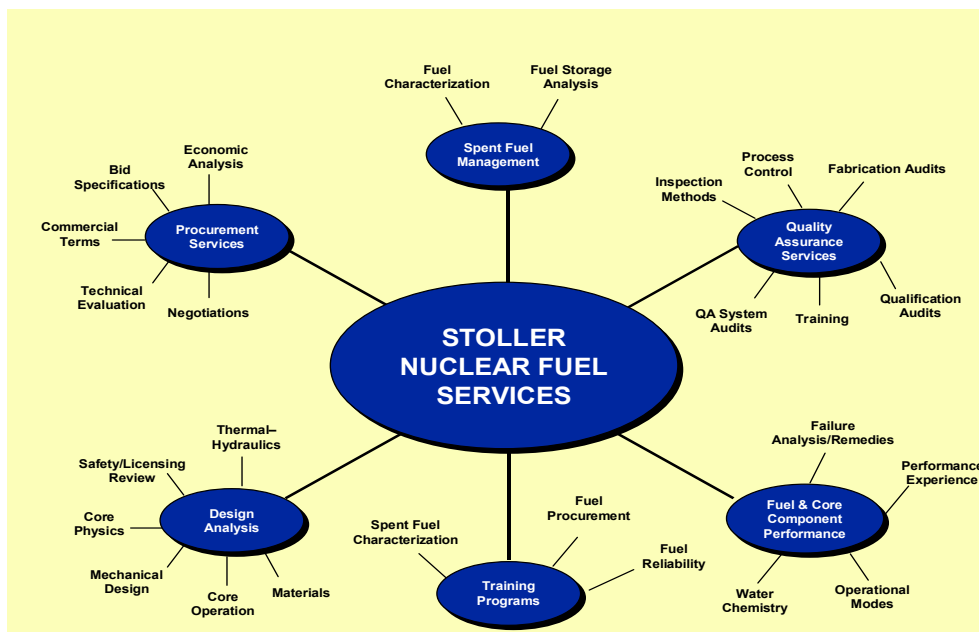
Stoller Nuclear Fuel:

A DIVISION OF NAC WORLDWIDE CONSULTING

BACKGROUND AND EXPERIENCE

Stoller Nuclear Fuel Division of NAC Worldwide Consulting (NAC/Stoller) offers a wide variety of professional training programs to enhance the nuclear fuel programs of reactor plant operators. With over four decades of hands-on experience, NAC Stoller is uniquely qualified to improve the qualifications of your staff and enhance their knowledge and efficiency.

Since its founding in 1959, NAC Stoller has established itself as the world's premier provider of nuclear fuel consulting services to the international utility industry. NAC Stoller's clients operate AGR, BWR, PWR and VVER nuclear power plants in the United States, Eastern and Western Europe, Asia and Latin America, and our assignments have involved fuel designed and manufactured by every supplier in the United States and Europe. In the course of this work, NAC Stoller has reviewed and analyzed all contemporary fuel designs and their features and has become thoroughly familiar with the most effective means to promote fuel reliability and minimize fuel cycle and plant operating costs.

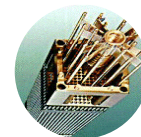


NAC/Stoller's consultants have expertise in all of the technical, economic and commercial disciplines necessary to carry out the wide array of projects assigned by its client utilities. Many of the members of the NAC/Stoller staff have been active in the nuclear fuel industry for 25 years or more. Thus, all of NAC Stoller's instructors have had direct experience in the disciplines they are teaching and can relate directly to the concerns and challenges of your staff.

NAC/Stoller's experience falls into five principal categories:

1. NUCLEAR FUEL FABRICATION PROCUREMENT SERVICES

Since the 1960s, NAC Stoller has provided assistance in the procurement of nuclear fuel fabrication services to more than 50 international utilities. These assignments have resulted in the purchase of nuclear fuel for over 145 BWRs, PWRs and VVERs around the world.



NAC Stoller's procurement assignments have included:

- ◆ Analysis of the market for fuel fabrication services
- ◆ Procurement planning and strategy
- ◆ Drafting of bid specifications and fuel supply contracts
- ◆ Evaluation of the technical, economic and commercial aspects of fuel proposals
- ◆ Negotiation of final nuclear fuel contracts
- ◆ Assistance in the transition between fuel vendors

2. NUCLEAR FUEL DESIGN REVIEW AND ANALYSIS

NAC Stoller provides utilities with informed, independent assessments of fuel designs and design features and their likely performance under anticipated operating conditions. These assessments may be part of a fuel procurement assignment or may be performed when a utility's current vendor initiates a change in the design to enhance economic or technical performance or to resolve a performance problem.

Design reviews encompass the nuclear, thermal-hydraulic and mechanical aspects of the fuel design as well as the materials from which the fuel assembly components are fabricated. Design changes are reviewed not only to determine whether they will produce the benefits ascribed to them, but also whether the changes are likely to cause unanticipated problems in future operation.

3. NUCLEAR FUEL QUALITY ASSURANCE SERVICES

NAC Stoller provides quality assurance (QA) and technical surveillance services to utility clients, advising or supporting the utility QA personnel or acting as an independent auditor. Past assignments have involved audits in the manufacturing facilities of all U.S. vendors, most European vendors and the component subcontractors to many of these suppliers.

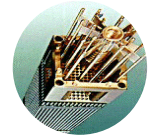
NAC Stoller's assignments have included:

- ◆ Training of utility personnel
- ◆ Vendor QA system audits
- ◆ Manufacturing process qualification audits
- ◆ QA audits/technical surveillance of fuel assembly and component manufacture

4. NUCLEAR FUEL PERFORMANCE ASSESSMENT

NAC Stoller's nuclear fuel performance services include:

- ◆ Tracking the performance of fuel assemblies and their components for each of the principal vendors and cataloging:
 - The quantity of each design irradiated and its exposure
 - The number of fuel failures recorded, their causes and remedies
- ◆ Studies of generic fuel performance problems, normally sponsored by groups of utilities that are using, or contemplating the use of, the affected fuel design. These investigations include:
 - Determining the causes of the problem
 - Assessing the operating impact of the problem and how it might be mitigated
 - Evaluating the resolution of the problem proposed by the vendor



- ◆ Assistance to individual utilities in the solution of specific performance problems (e.g., fuel failures). These assignments typically involve assistance in:
 - Determining the root cause of the problem
 - Devising specific operating strategies to mitigate the impact of the problem until the affected fuel assemblies can be repaired or discharged
 - Assessing the effectiveness of design changes and other solutions proposed by the vendor, the adequacy of the testing program for the revised design, etc.

NAC Stoller's involvement in performance assessments has also resulted in an intimate knowledge of all contemporary fuel designs and the advantages, disadvantages and uncertainties associated with each one.

5. SPENT FUEL MANAGEMENT

NAC Stoller's spent fuel management services focus principally on assisting utilities with the characterization of spent fuel prior to transfer from the spent fuel pool to on-site dry storage or to an off-site facility. The objective is to demonstrate compliance with NRC and DOE requirements with the minimum of effort and to minimize or eliminate the need for special containers for the stored fuel.

NAC Stoller has also provided significant assistance to other NAC International departments in the analysis of the performance of spent fuel during drying and storage in support of the licensing of NAC's spent fuel storage systems for high burnup fuel.

6. TRAINING PROGRAMS

For more than 30 years, NAC Stoller has conducted training programs for utilities in each of the areas described above. Among the recent formal programs have been:

- ◆ The Nuclear Fuel Fabrication Industry
- ◆ Nuclear Fuel Procurement
- ◆ Nuclear Fuel Manufacturing and Its Relationship to Fuel Performance
- ◆ Performing Quality Assurance Audits and Their Relationship to Fuel Performance
- ◆ Inspection and Identification of Failed Fuel Assemblies
- ◆ Spent Fuel Characterization for Dry Storage

In addition, the NAC Stoller staff has given numerous verbal presentations to clients on a wide variety of subjects. Many of our assignments involve the presentation of the project's findings, conclusions and recommendations in meetings with the client.

Each year, NAC Stoller holds three-day seminars in the U.S., Europe and Japan as part of its Core Performance Assessment Group (COPAG). At these seminars, the NAC Stoller staff makes presentations on numerous topics associated with nuclear fuel design, manufacturing and performance. The COPAG program has been conducted continuously since 1975.

Stoller Nuclear Fuel offers a wide variety of services to nuclear utilities, utility organizations, and government agencies around the world in the procurement, design, manufacturing and performance of nuclear fuel and core components. **NAC Worldwide Consulting**, a division of Atlanta-based NAC International, is a leading management consultancy for the energy and technology community specializing in strategic, performance, energy resource and information management.