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**MA Radiation Control Program  
Environmental Radiation Laboratory**

**Fax**

To: Duncan White

From: Thomas F. O'Connell *TOC*

Fax: 610.337.5269

Date: January 31, 2001

Phone: 610.337.5042

Pages: 4 Pages, including cover

Re: NRC/NRC Equipment

CC:

☐ As Requested

☐ For Review

☐ Please Comment

☐ Please Reply

☒ FYI

•Comments: Duncan,

History of H.C. Starck Company and how National Research Corp. of  
Cambridge and Newton fits into the mix.

Enjoy.

Thank you,

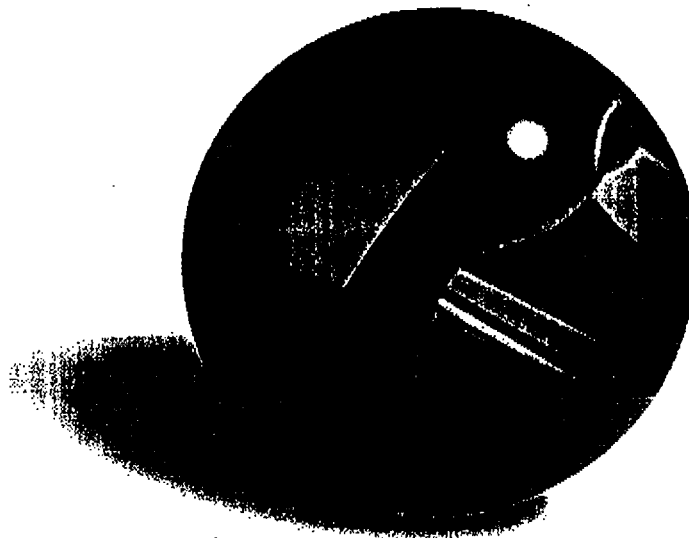
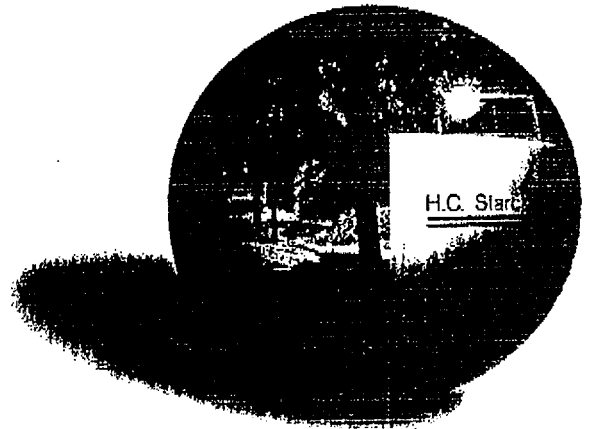
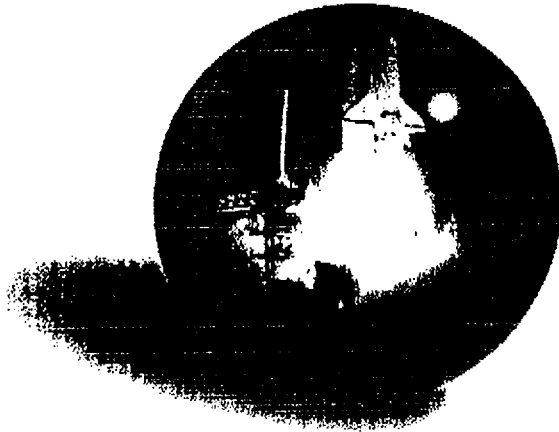
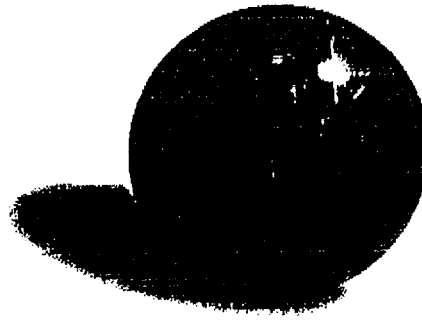
Tom

ITEM #

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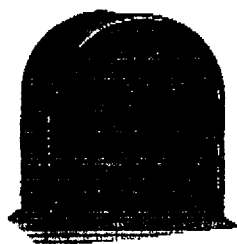
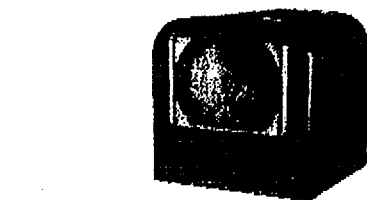
**H.C. Starck Inc.**  
45 Industrial Place  
Newton, MA 02461-1951 / USA  
Phone: (617) 630-5800  
Fax: (617) 630-4888  
[www.hcstarckus.com](http://www.hcstarckus.com)

A Bayer  Company



# Company History

*A look back at our past . . .*



## 1940s

- ▲ National Research Corporation, Cambridge, MA is founded by Richard Morse and William Coolidge. Mission: Commercial development of the use of vacuum as a process tool.

Early products include: lens coatings for periscopes and binoculars; White Mold® frozen orange juice concentrate (now owned by the Coca-Cola Company); freeze-dried coffee; vacuum arc melted superalloys.

## 1950s

- ▲ Vacuum Equipment Division opens in Newton, MA.
- ▲ Processes for producing titanium metal are established.
- ▲ Zirconium plant opens in Pensacola, FL.
- ▲ Pilot work on producing tantalum by sodium reduction and arc melting begins.

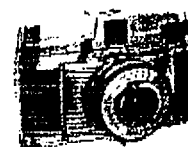
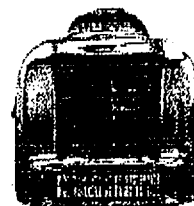
- ▲ Tantalum sodium reduction plant is built in Newton, MA.

- ▲ Commercial production of tantalum powder, ingot and foil is started.

- ▲ Metals Division for tantalum applications established as a separate business.

- ▲ Maximum reduced capacitor and tantalum powders, SGN and SP are produced.

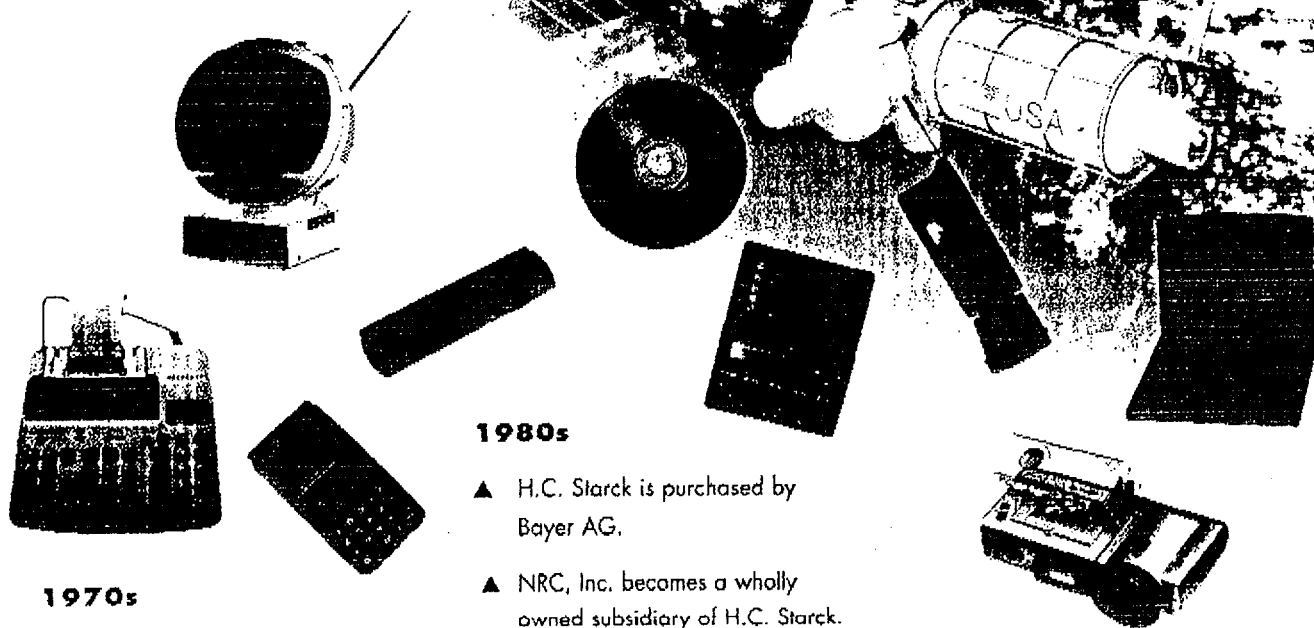
- ▲ First metal powder and powders, SGN and SP are produced.



## 1960s

- ▲ US patent issued for sodium reduction in stirred reactors, which became the basis for all tantalum powders produced worldwide.
- ▲ European sales office established in Switzerland.
- ▲ Metals Division headquarters, arc melting and labs are moved from Cambridge, MA to Newton, MA.
- ▲ National Research Corp. is purchased by Norton Company, Worcester, MA.
- ▲ Mill products and fabricated parts business are developed.
- ▲ Vacuum Metallurgical Corp. is established as the Japanese distributor for tantalum powder.

While looking an eye on our future



### 1970s

- ▲ Norton Company sells Metals Division to 50/50 partnership of H.C. Starck GmbH & Co. and Samincorp, Inc. New company is called NRC, Inc.
- ▲ Mill products and fabricated parts operations expanded.
- ▲ Doped powders developed.



### 1980s

- ▲ H.C. Starck is purchased by Bayer AG.
- ▲ NRC, Inc. becomes a wholly owned subsidiary of H.C. Starck.
- ▲ Deoxidized powders are developed.
- ▲ New series of higher-capacitance powders are developed.
- ▲ Starck acquires equipment and technology from Fansteel, Inc. and expands wire operations.
- ▲ V TECH becomes Japanese partner.
- ▲ Metallurgical processing capabilities improved with electron beam furnace, rolling mill and world's first commercial plasma arc furnace for melting refractory metals.

### 1990s

- ▲ Thai Tantalum is acquired by Starck Group.
- ▲ NRC, Inc. changes its name to H.C. Starck Inc.
- ▲ H.C. Starck, Sarnia, Canada is opened.
- ▲ H.C. Starck Inc. receives its ISO 9001 certification.
- ▲ Newton operations are expanded and modernized.
- ▲ Greater than 100,000CV/g tantalum and niobium powders developed.