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NCI Supercomputer Upgrading Supported By DCBD Board; Could Cost $40 Million Plus Renovations

"Enthusiastic" support for upgrading of NCI's supercomputer at the Frederick Cancer Research Facility, which could cost an estimated $20 to 40 million, was expressed by the Div. of Cancer Biology & Diagnosis Board of Scientific Counselors.

A resolution, passed unanimously at the Board's meeting

(Continued to page 2)

In Brief

Weicker Heads New Group For More Spending On Medical Research; Committee OKs Sullivan

LOWELL WEICKER, the former Connecticut senator, this week announced the formation of a group to raise public awareness of the need for spending on medical research. The group, Research! America, consists of associations representing medical schools and universities, industry, professional and scientific societies and philanthropy. Prominent members include the American Assn. of Medical Colleges, Assn. of American Universities, Mary Lasker, and the National Health Council. Weicker will be president and chief executive officer of the new group, which is commited to pubic education and support for health research. The organization will be based in Alexandria, VA, but Weicker said he doesn't plan to spend much time on Capitol Hill. "I'm not a lobbyist," he said. "My job is to go all across the country, not to speak to health care organizations or professionals, but to the American people, and to fight just as hard to convince them of the need for research as I did in the Senate." Weicker said one goal is to make the initials NIH as well known to Americans as NASA. **WILLIAM HENDEE,** vice president for science and technology of the American Medical Assn. and a member of the Div. of Cancer Treatment Board of Scientific Counselors, is a member of the Research! America steering committee. . . **SENATE FINANCE** Committee voted 19-0 to confirm Louis Sullivan as secretary of the Dept. of Health & Human Services. A vote by the full Senate was expected this week. Sullivan, founder and president of Morehouse School of Medicine, is a member of the National Cancer Advisory Board and a former member of the Div. of Cancer Prevention & Control Board of Scientific Counselors. . . . **WILLIAM ROPER,** administrator of the Health Care Financing Administration, has been named director of the White House Office of Policy Development and deputy assistant to the President for domestic policy.

DCBD Board Gives "Enthusiastic" Okay To Proposed Supercomputer Upgrade

(Continued from page 1)
last week, was in agreement with an independent ad hoc panel's recommendation.

The Board said it "enthusiastically supports the concept of the upgrading of the supercomputer and encourages the director of DCBD and the director of NCI to identify funds" for the project.

The supercomputer facility, officially called the Advanced Scientific Computing Laboratory and located at the Frederick Cancer Research Facility, became operational in April 1986.

As of last September the ASCL had more than 280 registered users, and for the last eight months, the Cray X-MP 24 supercomputer has averaged 3,830 jobs per month and 4.1 cpu seconds of processor time.

The supercomputer "has had high utilization from the moment it was turned on," said Jacob Maizel, chief of the Mathematical Biology Laboratory. Maizel gave an overview of the ASCL and described the proposed upgrade to the Board.

The upgrade would include the addition of a mainframe supercomputer with two to four times the processor speed of the existing system using multiple processors. The new processors would have the highest possible serial, scalar and vector processing capability and at least 128 to 256 million words of high speed random access memory.

In addition, other equipment to support the upgrade would be needed, including graphic work stations, front end computers, high speed disk storage and archival storage.

The upgrade would "enable new problems to be solved and generate a whole new set of questions," said Ralph Roskies, chairman of the panel that evaluated the supercomputer program. Roskies is scientific director of the Pittsburgh Supercomputing Center.

"There was substantial agreement among the committee members," Roskies said. The panel made the following conclusions and recommendations:

--Current applications are quite appropriate for a supercomputer.

--The upgrade should include major innovative computational resources such as massively parallel architecture and special purpose processors which may be particularly applicable to sequence analysis and molecular dynamics.

--Access and use procedures are working well.

--Continue and enhance efforts in high speed networking to assure no real or perceived barriers to nationwide users by virtue of location, and in particular place an increased emphasis on the Frederick/NIH Bethesda linkage.

--Substantially enhanced memory and external on line storage are essential.

"The supercomputer is now playing a major role as an instrument for basic research in structure analysis of drugs and macromolecules, in sequence analysis of pathogenic genes of humans, viruses and other organisms, and in a variety of new areas of biomedical research," the panel's report said.

"The system has already demonstrated the ability to calculate protein molecular dynamics in real time as well as efficient utilization of memory and variable word size. Both of these problems are of prime importance to molecular biology and are not as appropriately handled by conventional supercomputers.

"It has been adapted to image analysis problems, neurobiology, database searches and fluid dynamics, all of which are of growing importance in this area. In addition, the capability can be easily scaled in the current design so that as problems are adapted, increased capacity can be added without difficulty.

"(The upgrade's) primary initial use would be to explore sequence analysis, molecular dynamics in real time, image analysis, database analysis, and in adapting algorithms to the new architecture."

The panel was made up of nine experts in high performance computing and biomedical research. A team of technical consultants from Systolic Technologies Inc. conducted an

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analysis of high performance computing at NIH and the technical and administrative performance of the ASCL.

Harel Weinstein, chairman of physiology and biophysics at Mount Sinai Medical Center praised the accessibility of the supercomputer.

"This facility is different from all the others," he said. "It feels and handles differently. Even if you can't finish (a problem) you can try out what you need to do, and that's an extraordinary relief. It is really run by the users."

The ASCL is operated by Program Resources Inc., NCI's support and services contractor for FCRF.

It is unclear where the funds for the upgrade would come from. According to Roskies, the panel was told, "Don't worry about the money, just worry about the science."

No estimate the cost of upgrading was presented to the Board. Maizel later told **The Cancer Letter** that the overall cost could be anywhere from $20 to 40 million, not including some renovation of building space which will be required. He noted that the costs probably could be extended over a few years.

By the time the money becomes available, Maizel added, supercomputer technology could move ahead and possibly impact the cost. His estimate was based on existing technology.

NIH Use Least

Weinstein said that it is possible the facility could obtain funding directly from Congress, "with nothing to do with NIH."

According to Maizel, NCI scientists and contractors make up 50 percent of the facility's users. NIH affiliated researchers make up 7.4 percent of the users, and other biomedical institutions 37.6 percent.

NIH has the least amount of usage time in part because of the lack of a campus wide computer network, Maizel said. However, plans for a network are being made.

"There's a serious commitment on the part of NIH to (upgrade the campus network)," said Alan Rabson, DCBD director. Roskies said the network is "essential."

Funding And Direction Of IL-2/LAK Trials Questioned By DCT Board

NCI's funding of clinical trials carried out by the interleukin-2/LAK therapy working group was questioned by the Div. of Cancer Treatment Board of Scientific Counselors at its last meeting.

Three Board members, Charles Balch, Lawrence Einhorn and Robert Schimke, spoke against continuing the working group in its present form.

The working group trials began in 1987 and are still under way at New England Medical Center, Montefiore Hospital, Loyola, Univ. of Texas (San Antonio), City of Hope and Univ. of California (San Francisco).

The trials were set up to confirm Surgery Branch Chief Steven Rosenberg's results with IL-2/LAK therapy, to test the effectiveness of the therapy on other malignancies besides colorectal cancer, renal cell cancer and malignant melanoma, and to determine whether the therapy could be made more effective.

Annual funding for the working group is $4.7 million.

NCI is deciding whether the working group should continue to study the effects of the therapy on other cancers. Also being considered are phase 2 studies of IL-2/LAK in combination with alpha interferon, tumor necrosis factor and monoclonal antibodies.

Balch suggested opening up the working group to other institutions or recompeting it as master agreements. IL-2/LAK should not be the "central focus" of the trials, he said.

Einhorn said the therapy "is in transition and has already been confirmed." He said he sees "no raison d'etre to continue to reconfirm something that probably is not going to be the final product."

Board member John Mendelsohn said further studies to find other cancers that are responsive to the therapy are unnecessary. He said research should stay with the cancers the therapy has been most effective combatting.

At the same meeting, the DCT Board expressed its confidence in the designation of some clinical trials as "high priority trials" and asked that the trials continue to receive preferential funding.

There are currently five studies designated high priority clinical trials--a lymphoma trial, a bladder cancer trial and three large bowel cancer trials.

Patient accrual has been good, and one colon cancer trial is already closed and completed, said Michael Friedman, director of the Cancer Therapy Evaluation Program. The bladder cancer trial as of January had accrued only 35 patients, the slowest accrual of the high priority trials.

The designation of those studies as high priority was based on several criteria: the prevalence of the disease, an outstanding

The designation of those studies as high priority was based on several criteria: the prevalence of the disease, an outstanding clinical opportunity, an urgent scientific question, or the expectation that the biologic importance of the anticipated findings would be so great as to warrant an extra effort.

The selection process for the high priority designation began at strategy meetings of cooperative group and cancer center representatives to advise CTEP about possible trials. CTEP then identified candidate protocols, and group chairmen reviewed and approved the choices. The DCT Board had the final say on high priority designation.

According to Friedman, the trials have been fairly economical, costing about $1,900 per case. The quality of the data has been "quite excellent." There is also an educational advantage to bringing in "hundreds of potentially important new investigators that can be engaged in this process, not only for high priority trials, but also for other group studies," he said.

The budget for the cooperative groups, including the high priority trials, is $57.4 million, Friedman said. Groups receive only 76 to 96 percent of their recommended budgets.

"I would contend that there's a massive research agenda which is far larger than we can address with our current group resources, so the question is where should new clinical trials money be targeted?" Friedman said. He listed three options:

--Fund the groups fully, which would cost $80 million, and expand high priority trials to the full extent, costing about $6 million. Friedman called this the "blue sky option" since "we have absolutely no idea where 86 million would come from."

--Fund the groups more fully at the expense of high priority trials.

--Maintain the current group activities at the partial funding plan and whenever new moneys are found, to supplement the high priority trials preferentially.

Board member James Cox suggested another option of identifying high priority trials without offering additional funding. This could be "a mechanism for helping cooperative groups set priorities," he said.

"Cancer centers are not doing trials for free," DCT Director Bruce Chabner said. "Without funding, just designating something a high priority trial is not going to work."

Other Board members supported the high priority designation, but asked if NCI had considered asking organizations or pharmaceutical firms for funding.

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relationship with pharmaceutical firms is "they provide the drug and we pay for the rest." However, he indicated that NCI is interested in "greater cost sharing."

AMA, ACOS, VA Express Interest In Trials; NCI, DCT Board Cool

The American College of Surgeons, the American Medical Assn. and Veterans Administration hospitals have expressed interest in participating in NCI supported clinical trials, but NCI officials are wary of rushing into collaboration.

The idea received a less than enthusiastic response from the Div. of Cancer Treatment Board of Scientific Counselors.

Michael Friedman, director of the Cancer Therapy Evaluation Program, asked the Board at its last meeting for its opinion of setting up studies with the groups. Collaboration with the organizations should involve, according to Friedman, very large randomized trials of "relatively simple therapies," requiring little data, possibly only survival data.

Potential studies could include: 5-FU and levamisole in breast cancer; RT, 5-FU and levamisole in rectal cancer; 5-FU, methyl CCNU, leucovorin and levamisole in colon cancer; orchiectomy and flutamide to progression versus administration for life in prostate cancer; and levamisole in melanoma.

NCI is particularly interested in working with ACOS because the involvement of surgeons in trials has "never been optimal," Friedman said. AMA has said it could pass along information from the trials to general practitioners.

However, NCI has several concerns about working with the groups, since they lack a track record in clinical trials, Friedman said. Those concerns are: the quality control of the therapy the organizations will provide, a commitment to follow up and a lack of organizational experience in managing clinical trials. There are also questions about how the trials would be funded and who would provide the scientific direction to the trials.

"I don't think it's a good idea," said Board member Lawrence Einhorn. "To bring on an entirely new group of physicians doesn't make sense." He called large, randomized trials "a major step backward." Einhorn also objected to further studies of levamisole.

Friedman noted that "you could put in other studies that you would find more appealing. Those were examples."

Friedman put the question to the Board as follows: "Since we only capture between one half and one percent of all the available patients on a clinical trial, is there a value in extending this mechanism to ask the kinds of questions which have clinical relevance?"

CTEP has spent much time and effort during the past two to three years on the problem of patient accrual, and getting more patients into clinical trials. Friedman restated his belief that one of the major obstacles to progress is getting enough patients for clinical trials.

That view has gone almost unchallenged, but Einhorn cited some instances when lack of patients is not a problem.

"For example," Einhorn said, "with colorectal cancer, there are too many patients on trials and there aren't enough leads to be looking at bringing on the American College of Surgeons and the AMA and the VA in these common diseases."

Countered Board member Charles Balch: "I think what Mike is trying to do is to build more flexibility into the system by promoting good clinical research through a different mechanism than just cooperative groups. I think one of the problems that we have right now is we have only one mechanism and as the number of cooperative groups are decreasing, we're getting down to a few very large cooperative groups.

"There will continue to be good ideas in clinical investigation and different mechanisms for accomplishing that other than the cooperative groups," Balch said. "CTEP needs to have those mechanisms in place."

Also, given NCI's limited budget, partnerships with other organizations could provide extra funding for clinical trials, Balch said.

DCT Director Bruce Chabner said the idea is "interesting, but it has limited potential." Although large numbers of patients would be available, "it's possible we really can't make use of this resource."

There could be other ways to collaborate with the organizations, Chabner said. One idea "we are entertaining with the AMA" is to make it easier for physicians to get access to group C drugs, he said. NCI could then "get follow up experience (with the physicians) to see if we're really influencing patterns of practice in patient responses.

"My bias is towards supporting the more sophisticated and intensive kinds of clinical trials."

DCT Board Approves Management Support, Drug Storage Concepts

The Div. of Cancer Treatment Board of Scientific Counselors gave concept approval to three contract recompetitions and one non-competitive contract at the Board's recent meeting.

The three competitive contract concepts approved were recompetitions of an $800,000 per year data management services contract, a $700,000 per year drug and chemical compound storage contract, and a nearly $500,000 per year conference planning and support contract.

Clinical data management. Recompetition of a contract held by Orkand Corp. The estimated annual amount of the contract is $800,000. The award would run from Oct. 1, 1990 to Sept. 30, 1995.

This contract has been in place since 1972 under the direction of the Biostatistics & Data Management Section of the Clinical Oncology Program.

Working in government provided space at NIH and at corporate headquarters, contract staff (1) works directly with COP investigators helping them define data collection requirements and develop, document and maintain the software to support the various databases of the COP, (2) provides data collection and data management, and (3) responds to the other data processing requirements of the COP branches as directed by the project officer.

Accomplishments of the project include:

1. The cancer patient research information system was designed and is being maintained by contract staff. This file management software system provides a means for collecting and retrieving baseline and treatment related data on patients being treated by the COP branches. Contract staff assists in collection of the data and provides summary reports. More than 45,000 forms are stored for more than 8,500 patients.

2. Operations office or statistical office support has been provided for a number of multi-institutional clinical trials. This support includes producing randomized materials and performing randomization, monitoring eligibility and data submission, editing data, development and maintenance of software and updating of study database, and production of reports and tabulations. Studies supported include: Ovarian Cancer Study Group/Gynecologic Oncology Group protocols in early stage ovarian cancer; and NCI/Children's Cancer Study Group protocols for acute lymphoblastic leukemia.

3. Contract staff is developing microcomputer based data management systems for the Pediatric Branch and the Medicine Branch of COP. These systems will permit extraction of laboratory data from the NIH Clinical Center's computer systems and placement into a comprehensive record of patients' treatments and results.

4. Individual contract staff members provide specialized support to a number of COP branches.

5. Contract staff has worked closely with statisticians and other researchers to determine and develop methodologies and procedures.

The concept was approved unanimously.

Storage and distribution of chemicals and drugs used in preclinical evaluation and development. Recompetition of a contract held by ERCI Facilities Service Corp. for an estimated annual amount of $700,000 for five years.

The objectives of this contract are the receipt, storage, inventory, distribution, documentation and control of the Developmental Therapeutics Program's synthetic compounds, crystalline natural products and bulk drugs. The synthetic compounds include those acquired for both anticancer and anti-AIDS screening. The compounds acquired solely for anti-AIDS evaluation are stored in a separate area of the facility and separate costs are maintained for both cancer and AIDS under the same contract.

Under the contract, accomplishments include the weighing, distribution and inventory operations of synthetic compounds for both cancer and AIDS screening, crystalline natural products and bulk clinical drugs. More than 13,000 compounds have been shipped to domestic and foreign researchers during this period. Additional tasks have been the inventory, repackaging and reshelving of more than 12,000 returned samples; implementation of robotic weighing operations; revision of record keeping and labeling procedures for handling the bulk clinical drugs; and implementation f a new information system for documentation and distribution of bulk clinical drugs.

It is expected that in vitro screens for cancer and AIDS will increase the work load of this contract. This increase has required an accelerated rate of spending and early recompetition.

Board Chairman John Niederhuber asked Michael Boyd, director of the Developmental Therapeutics Program, about the breakdown in funds for cancer and AIDS. Boyd said about two thirds of the money is used for cancer compounds and a third for AIDS. When the AIDS screening program becomes fully operational, however, there will be more costs for AIDS activity, he said.

Board member Robert Schimke said he was concerned that it appeared the cost of the program was doubling. DCT Director Bruce Chabner said the concept was seeking continued funding at the same level as it has been spending in the past.

Board member Kenneth Olden said he objected to the limitations on the materials the program will accept. Chabner said the limitations are determined by the funding level and the ability of the staff to screen a limited number of compounds a year.

The concept was approved, with Olden opposed.

Planning and conference support services. Recompetition of a contract held by Technical Resources Inc. for an estimated annual amount of $493,660 for five years.

This contract has been in place since 1981 under the direction of the DCT director's office. The contractor is to provide conference management and logistics support for conferences, symposia and board meetings. Logistics support will include various technical and clerical tasks ranging from report design and preparation to routine typing. The more complex of these support activities frequently require the abstracting and formatting, including bibliography preparation and indexing, of papers and reports generated at scientific meetings.

Due to the continuing FTE constraints, it is imperative that these services be performed using the contract mechanism.

It is anticipated that the contractor will continue to provide these services in the future at approximately the same level of effort as in recent years. This recompetition will include computer support that will entail designing PC based systems to assist in the management of the division's resources.

The concept was approved unanimously.

Neutron therapy clinical trials. A noncompetitive award for an estimated annual amount of $1.2 million to run from Oct. 1, 1989 to Sept. 30, 1993. Contracts are

currently held by Univ. of Washington, UCLA and M.D. Anderson Cancer Center.

The current contracts were awarded in 1979 for 10 years to develop new designs of neutron generators, construct the treatment facilities and to carry out phase 1, 2 and 3 clinical trials. The contracts will end Sept. 30. The Board's ad hoc review committee, chaired by William Hendee, recommended that the contracts be continued until completion of phase 3 trials.

Phase 1 and 2 studies were completed in 1986. Phase 3 protocols were developed to randomize appropriate patients to receive either neutron therapy or the best available conventional therapy. These trials are well underway and need to be continued beyond September to accrue the necessary number of patients to complete the clinical studies. Protocols are investigating the treatment of cancer of the head and neck, prostate and lung, and sarcomas of the bone and soft tissue.

Funding for these contracts should be related to the number of patients placed on the phase 3 trials to encourage rapid completion of the studies and to limit the costs. Principal investigators of the current contracts have submitted data supporting a figure of $6,500 per protocol patient. This will be the only reimbursement to be provided to the contractors beyond September, exclusive of data management for follow up and travel costs to the Neutron Therapy Collaborative Working Group meetings. Based on projected accruals to the various studies, it is estimated that the dollars required are: FY 1990 $1.2 million; FY 1991 $1.1 million; FY 1992 $1.1 million; and FY 1993 $500,000.

The Neutron Therapy Collaborative Working Group, made up of the principal investigators of these contracts and the chief physicists at the respective institutions, is essential for maintaining good communications among the contractors, timely analysis of the data and consensus of decisions related to the clinical studies. Thus, funding for biannual meetings of this group, as well as data management costs, is budgeted separately from the reimbursement for the accrued patients.

Several Board members expressed surprise at the size of the $6,500 per protocol patient figure. Sandy Link of the Radiation Research Program, explained that the figure was derived by averaging the costs each principal investigators estimated would be necessary. The cost "seemed to be in line with other Radiation Therapy Oncology Group trials," he said.

Chabner asked if the figure is in addition to third party payment. Link said it varied between institutions. UCLA, for example, gives the cost of the protocol as $10,000 to $12,000, because it has been denied third party reimbursement, she said. Univ. of Washington, however, puts the cost at around $5,000 to $7,500.

"It bothers me that we are letting Washington get as much as UCLA, when we should recover the cost along with them," Chabner said.

John Antoine, RRP director, said the philosophy of the program is to complete the protocol as fast as possible and asked the Board to approve the concept. "We can negotiate downward the fees," he said.

Board member James Cox insisted that the figure was a valid one. He contended that the payment formula, once established, would "never obligate NCI to any more money--it's not going to go up."

The Board approved the concept, with Yung-chi Cheng opposed and Charles Balch, Susan Horwitz and John Mendelsohn abstaining.

NCI CONTRACT AWARDS

Title: Efficacy studies of chemopreventive agents in animal models
Contractor: IIT Research Institute, $300,042 and $149,471 (two master agreement orders)

Adamson Objects To IOM "Primrose Path Of Centralization" In Report

The Institute of Medicine's report on the NIH intramural program, with recommendations for assuring continued excellence and to help stem the loss of senior scientists to industry and academia, in general have been received enthusiastically by NIH scientists and administrators.

At least two of the recommendations have drawn some fire from NCI, however.

The six recommendations were:

<> Increased flexibility in administration. This would include a new personnel system, new pay standards based on market comparability, ability to exceed federal pay ceilings, portable retirement benefits, and replacement of employment ceilings with budgetary limitations.

<> Endowed chairs for distinguished scientists. This is for a congressionally chartered foundation, one purpose of which would be to permit the term appointment of up to 10 distinguished scientists to endowed chairs.

<> Director's discretionary fund. This would allow the NIH director to respond to special issues with an annual appropriation of $25 million.

<> NIH scholars program. This would provide a source of new senior staff through competitive nontenured appointment at the assistant professor level of up to six scholars per year, to be supported by a separate appropriation of $1.5 million during a total of six years.

<> Maintaining an administratively efficient NIH. To this end, the report recommends delegation of more authority to the NIH director, "to make decisions on administrative matters without being subject to review by the assistant secretary for health."

<> Improving review of the intramural program. The report recommends creation of a panel under the NIH Director's Advisory Committee to monitor the reviews of intramural research by the boards of scientific counselors. It further recommends an external review of each of the intramural programs and their scientific directors every four years.

Richard Adamson is one NIH administrator who, while supporting the recommendations that would upgrade pay and status of senior scientists and administrators, had reservations about other aspects of the report.

"I believe that the first issue addresses the single most important problem facing the intramural program," the director of the Div. of Cancer Etiology told his Board of Scientific Counselors last week. That problem is "the inadequate level of pay for outstanding senior scientists and scientist administrators, and I believe NIH will endorse actions to remedy this situation.

"Some of the other recommendations also address significant issues," Adamson continued. "However, I personally disagree with two of the recommendatins--that of an NIH director's discretionary fund of $25 million for the intramural program and that of an NIH director's advisory committee to monitor the reviews of intramural research, the boards of scientific counselors and also to have an external review of each of the intramural programs and scientific directors every four years." Adamson noted that at NCI, the scientific directors who would be monitored under the recommendation would be the division directors.

"Both of these recommendations fail to take into account the categorical nature of the institutes and the accountability of the division directors at NCI to the NCI director, their reports to the boards of scientific counselors, the followup reports of our site visits and our program review by the National Cancer Advisory Board.

"In addition, this recommendation may well lead us down the primrose path of centralization of the intramural program.

"Furthermore, an NIH director's advisory committee would neither have the time nor the expertise to undertake such a review," Adamson said.

Adamson briefed the Board on the cancer mortality study being conducted by the Radiation Epidemiology Branch in areas near nuclear facilities.

"The study will help to determine whether residents of counties containing or adjacent to nuclear facilities have a higher risk of dying from cancer than residents of similar counties without nuclear facilities," Adamson said.

The study was initiated in 1987 because of American public health concerns, and after a British survey of cancer mortality in areas around nuclear installations in the United Kingdom showed an excess number of childhood leukemia deaths. Results from other, smaller surveys of cancer deaths related to proximity to nuclear facilities in the United States and United Kingdom "have yielded conflicting results," Adamson noted.

NCI scientists are surveying cancer deaths in 113 counties containing or adjacent to 61 nuclear facilities that began operation before 1982. Using county mortality records collected for the years 1950-84, the researchers will evaluate any changes in mortality rates from all types of cancer in these counties from the time the individual nuclear installations began operating.

Then, for each of the 113 case counties, the researchers will compare the mortality rates in three counties with similar population and socioeconomic characteristics that do not have or are not near nuclear facilities (controls). The case and control counties are within the same geographic area and are usually within the same state. Mortality rates from the case counties will also be compared to overall U.S. mortality statistics.

The researchers will evaluate the counties for various types of cancer deaths according to sex, race and selected age groups. They will also compare cancer mortality before and after the nuclear facility became operational, and 10 or more years after the facility became operational. Because the British study showed a higher number of deaths from childhood leukemia in areas surround nuclear installations, the NCI researchers are taking a particularly close look at the deaths from this cancer, Adamson said.

Analysis of data is under way and results should be available by late 1989.

At the request of Sen. Edward Kennedy (D-MA), a meeting was held last month in Massachusetts of NCI scientists involved in the study and state public health officials. Concern has grown there about a reported increased incidence of leukema in several communities near the Pilgrim power plant in Plymouth County. Kennedy, local officials, members of citizens organizations and the press attended the meeting.

Joseph Fraumeni, director of DCE's Epidemiology & Biostatistics Program, moderated a question and answer period in which questions were raised about the study design. Additional strategies were suggested, such as taking into account incidence data, smaller geographic regions such as census tracts and wind direction. The NCI team stressed that the county mortality survey is only the initial step in evaluating possible hazards of living near nuclear facilities, complements studies being done by others and will guide future research efforts.