Design Review Meeting on Tank Retrieval Technologies
September 16-17, 1996
Moscow, Russia

Participants
For the US side
Sandia National Laboratory
James Lee

Pacific Northwest National Laboratory
Roger Gilchrist

Mike Rinker

TEA Associates, Inc.
Thomas Albert

Interpreter:
Tatiana Medvedeva

For the Russian side
Ministry of Atomic Energy of the Russian Federation
Evgeniy Kudryavtsev

Участники:
Со стороны США:
Сандииске Национальные Лаборатории
Джеймс Ли

Национальная Лаборатория Пасифик Нортгэст
Роджер Гилкрайт

Майк Ринкер

ТЕА Эссосиэйтс Инк.
Томас Элберт

Переводчик:
Татьяна Медведева

С российской стороны:
Министерство Российской Федерации по атомной энергии
Евгений Кудрявцев
Mining Chemical Combine
Yury Revenko

Boris Borakov

MAYAK Production Association
Yury Belikov

Radiochemservice
Vasily Dz jubenko

Institute of Physical Chemistry
Elena Zakharova

V.G. Khlopin Radium Institute
Vladimir Popik

Rem Lybtsev

Горно-химической комбинат
Юрий Ревенко

Борис Бораков

Производственное объединение “МАЯК”
Юрий Беликов

Компания “Радиохимсервис”
Василий Дзюбенко

Институт физической химии
Елена Захарова

Радиевый институт имени В.Г.
Хлопина
Владимир Попик

Рем Любцев
### Technical Discussions and Recommendations:

The objective of the design review was to:

- review the technical progress on the four projects sponsored by the Tank Focus Area under the authorization of the JCCEM¹
- discuss the specifications and preliminary design of the sludge retrieval equipment which is to be delivered to the Pacific Northwest National Laboratory
- discuss the objective and scope of activities of the Tank Retrieval Users Group

Following the introduction of the participants, there was a discussion of the agenda.

### Discussion of Dr. Zakharova’s project:

Dr. Elena Zakharova discussed the status of her work on sludge modelling. She described the program that has been carried out for the Mining Chemical Combine in studying the composition of the sludges and how this information can be used to plan and improve sludge retrieval operations.

She explained that by studying the effects of aging on sludges and by analyzing the thermobaric processes that should occur, they have been successful in synthesizing sludges with similar physical and chemical characteristics that are observed in real sludges.

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¹ A fifth project being performed by Dr. Anna Nardova at the Institute of Chemical Technology on the aerogel technology for solidification of tank wastes was reviewed previously in Seattle.

Пятый проект проводится Анной Нардовой из Института химической технологии. Проект посвящен аэрогельной технологии для отверждения отходов емкостей. Обзор данного проекта имел место ранее в Сиэтле.
Now they want to evaluate the rheological properties of the real and synthesized sludges.

Dr. Zakharova said that in order to continue the work under the contract with the Tank Focus Area she needs to know the radiochemical composition, the chemical composition, and phase composition of the sludges that she is to evaluate.

Dr. Lee reported that the sludge composition data from Savannah River is being sent by fax and should be delivered to Dr. Zakharova.

It was suggested that perhaps Elena Zakharova should visit the Savannah River Site and the Hanford Site to obtain the data that she needs for the sludge modeling work and to discuss the evaluation of the data with the specialists at the US sites. It was recommended that the visit be organized for the end of October.

It was agreed to extend the completion of Dr. Zakharova’s contract by 2 months from the receipt of the requested data.

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**Review of Tank Retrieval Equipment Project**

Dr. Revenko gave an overview of the status of the project for design of sludge retrieval equipment.

Dr. Borakov gave a presentation on the equipment.

Yury Belikov reported on the cleanup and decontamination of high level waste tanks at the MAYAK Production Association. That have occurred since his last report at the Augusta meeting (January)

Dr. James Lee described the concept of the plan for testing the Russian retrieval equipment. It will be tested the Quarter Scale Tank Installation demonstration facility at the Pacific Northwest National Laboratory with the assistance of the Russian specialists.
Dr. Revenko asked when the sludge compositions would be provided. Mike Rinker responded that the recipe for the sludge simulant for the retrieval equipment testing will be provided by the close of the meeting. Roger Gilchrist accepted the action item to deliver the recipe (composition) for the filter testing. He said that this composition would be provided by Monday, September 23.

Dr. Revenko remarked that he is concerned that the clay available in Russia and the US may have different characteristics. Since it doesn’t seem practical to provide the US clay in the required quantities, Jim Lee suggested that it may be necessary to build the equipment in Russian and then test the equipment in the PNNL test facility. It was agreed that this was the preferable approach.

There was a question about how many hydromonitors could be installed. Mike Rinker responded that there wasn’t any difficulty in installing new risers for as many hydromonitors as necessary.

Dr. Lee asked how many Russian specialists would be required to support the tests in Hanford. Dr. Revenko responded that four specialists would be required. Jim Lee concluded that we should proceed with this recommendation to the JCCEM.

Mike Rinker gave a presentation on the Quarter Scale Tank Installation which will be used for testing of the pulsating pump and other Russian retrieval equipment.

It was pointed out that the height of the pump (4.5m) is taller than the test tank. Therefore it is necessary to decide whether the dimensions of the pump should be modified for the unit to be shipped to the US for testing. After discussion it was decided to maintain the diameter of the pump at 22cm but reduce the length of the pump to 2m.

Mr. Rinker said that it is important to receive the interface drawings for the equipment at least two month in advance of...
shipment of the equipment.

Jim Lee suggested that the overall schedule be reviewed. He asked when the equipment would be ready for shipment. Dr. Revenko responded that the equipment would be ready for shipment at the end of February.

There was a discussion about the shipment costs and arrangements. Dr. Dzhubenko reminded the group that this was a question in the June 20 letter to Dave Geiser. Roger Gilchrist responded that he will take the action to respond to the June 20 letter from Dzhubenko to Dave Geiser.

Dr. Dzhubenko suggested that an advance team from Krasnoyarsk visit Hanford to inspect the site for installation to discuss the installation details and to discuss the plans for the tests to be conducted in the Spring. Jim Lee suggested that this was an excellent idea and should be considered subject to approval and availability of funds.

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**Review of Solid-Liquid Separation Project**

Dr. Vladimir Popik reported on the work at V.G. Khlopkin Radium Institute on solid liquid separation. In order to perform the required comparison test of their cross flow filter with the US supplied filter, they need the drawing of the US filter in order to be able to design the test apparatus to perform the comparison tests. The work is currently stymied by the lack of information that should have been provided by the US side.

There needs to be a decision on the simulated sludge composition to be used for the test of the filters. And second, they need the design and the actual US barrier to be incorporated into the test.

Dr. Roger Gilchrist responded that he would get this material as soon as possible. He will report by the close of the meeting on when this information will be available.

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**Обзор проекта по разделению твердой и жидкой фаз**

Д-р Владимир Попик рассказал о работе Радиевого института имени В.Г. Хлопина по разделению фаз. Для того чтобы провести совместные испытания американского фильтра и российского проточного фильтра, им необходимо получить чертежи американского фильтра и изготавливать оборудование для испытаний. В настоящее время работа приостановлена из-за отсутствия информации со стороны США.

Необходимо принять решение о составе модельной пульпы, которая будет использоваться для испытаний фильтра. И, во-вторых, необходимо использовать в испытаниях барьерную перегородку американского фильтра.

Д-р Роджер Гилкрайст ответил, что он предоставит эти материалы в самом ближайшем будущем. К концу совещания он скажет точнее, когда эта информация будет получена.
Dr. Gilcraft said that the drawings of the cross flow filter are available but there needs to be an approval to release the drawings. This is expected by next week. If there are any delays, this information will be provided as soon as possible.

Dr. Popik made a recommendation concerning the filtration project. He said that it would be useful to obtain a description of the facility that will be used to test the filter. He said that it was important to know how the sludge would be fed to the filter.

There was a discussion to clarify the ownership of the equipment and disposition of the equipment.

It was recommended that the US supplied filter will be disposed in Russia. The retrieval equipment will be tested in a nonradioactive environment. The Russian side will consider the situation of the final disposal of the equipment and make a recommendation to the JCCEM.

Dr. Dzubenko recommended, and it was agreed, that the contracts be amended to admit minor changes by exchange of letters.

Discussion of Tank Retrieval Users Group

There was a discussion of the High Level Waste Tank Retrieval Users Group, the scope and possible activities in the coming year. Dr. Lyubtsve proposed that the planned May 1997 meeting should be planned in Russia with the second meeting in the US in the fall of 1997.

Dr. Revenko suggested that the scope of the Users Group should address:

- tank retrieval
- tank decontamination
- tank "fate"

Obсуждение проекта по созданию координационной группы

Последователь обсуждения создания координационной группы по вопросам освобождения емкостей и ее деятельности на следующий год. Д-р Любцев рекомендовал провести первую встречу группы в России в мае 1997 года, а вторую встречу в США осенью 1997 года.

Д-р Ревенко предложил включить в круг рассмотрения группы следующие вопросы:

- освобождение емкостей
- дезактивация емкостей
It was agreed that these should be the themes for the meeting and each side should be prepared to present the problems, solutions, and technology needs.

- “судьба” емкостей
  Было принято решение считать эти вопросы основными темами повестки дня будущей встречи, при этом обе стороны должны подготовить сообщения по обзору своих текущих проблем, путях их решения и потребностях в технологиях.

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<tr>
<th>Concluding Remarks:</th>
<th>Заключительные замечания:</th>
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<tbody>
<tr>
<td>Jim Lee expressed his appreciation for the participation of the Russian specialists and commented that it seemed to him that the Users Group had actually begun.</td>
<td>Джим Ли выразил благодарность российским участникам встречи и отметил, что работа координационной группы уже началась.</td>
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<td>Dr. Revenko expressed his appreciation that a better mutual understanding had been achieved, and that we do meet on a regular basis.</td>
<td>Д-р Ревенко также выразил благодарность участникам встречи и отметил, что теперь у обеих сторон больше взаимопонимания и встречи действительно проходят регулярно.</td>
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Signed:
Подписаны:

For the U.S. side:
Со стороны США:

Dr. Roger Gilchrist
Д-р Роджер Гилкрайст

Dr. James Lee
Д-р Джеймс Ли

For the Russian side:
С российской стороны:

Dr. Yury Revenco
Д-р Юрий Ревенко

Dr. Evgeny Kudryavtsev
Д-р Евгений Кудрявцев