short rotation WOODY CROPS operations working group

STEERING COMMITTEE MINUTES

Atlanta, Georgia
September 28-29, 1995

ATTENDEES

Larry Burkholder, Morbark Industries
Frank Corley, Union Camp Corp.
Rick Dahlman, MN Dept. of Natural Resource
Tom Houghtaling, MN Power Co. (via phone)
Chuck Kaiser, James River Corp.
John Martin, Westvaco Corp.
Tim McDonald, USFS
Carolyn Nobel, ORNL
Bob Perlack, ORNL
Randy Richter, Simpson Timber Co.
Bryce Stokes, USFS
Jane Turnbull, EPRI
Lynn Wright, ORNL

PURPOSE

The purpose of the meeting was to learn, share information and come together as a Steering Committee for the SRWC Mechanization Working Group. Each Member present was given a package that contained a proposed meeting agenda, list of attendees, meeting objectives, summary of the Western Ad-Hoc meeting, a working list of issues and concerns, and a draft mission statement and charter.

PRELIMINARIES AND BACKGROUND

Bryce Stokes started the meeting with welcome, introductions, meeting objectives, and a brief overview of the agenda.

Bob Perlack gave a background presentation on the previous work done by ORNL. Most of the work was done previous to 1985, but now there is a renewed interest in

mechanization efforts. He also noted that a Bibliography of funded projects and reports is available.

Lynn Wright presented the status of the present DOE effort. She highlighted the fact that support exists for a harvesting initiative. Considering the current budget climate, financial support is more precarious, but some support funding exists and additional money is still a possibility. Specifically, the Office of Industrial Technologies (OIT) and the American Forest and Paper Association signed Agenda 2020, that promotes collaboration on pre-competitive R&D.

Jane Turnbull discussed EPRI's interest in biomass and mechanization. Although "biomass" is a new addition to their vocabulary, they have recently become interested due to limitations in other alternative energy sources and the opportunity for co-firing and CO2 mitigation. Some biomass initiatives are being pursued on CRP land in MN, NY, IA and other areas. She commented that ERIP is interested in working with paper and pulp industries.

Bryce gave USFS background. Leading back into the purpose for the meeting, he brought up the meeting held in Mobile, AL in the Spring of 1994. This meeting demonstrated enough interest that further steps were initiated:

- DOE would try to procure more funding
- USFS & DOE would organize a working group interested in mechanization of short rotation woody crops management

REPORT OF THE WESTERN AD-HOC MEETING

Chuck Kaiser, James River described what happened at the Western Ad-Hoc meeting held March 1, 1995 in Clatskanie, OR. The purpose of the meeting was to follow up on previous meetings, introduce new players in the SRWC arena and review the "state of the art" for short rotation operating activities. In this review, they identified activities and areas for improvement, prioritized and discussed cooperative solutions and follow-up activities.

ROUND ROBIN DISCUSSION

All the participants were asked to give their current and planned activities, priority issues and concerns and comment on their ideas for the role and worth of a working group and steering committee.

Randy Richter-Simpson Timber Co., California

> Simpson is approaching harvest for 10,000 acres of Eucalyptus. Priorities and interest: 1) debarking, 2) log storage and handling, and 3) chip quality. Simpson wants to see if they can harvest less expensively. He hopes this

meeting will provide the forum that his company was searching for in 1989. The working group should be used for dialogue and sharing information. He believes that the US is lagging in developing technology for short rotation woody crops.

Rick Dahlman, Utilization and Marketing Specialist, MN Department of Natural Resources

In MN, they are "on the brink of having large things happen." 3000 acres are planted in the state for a scale- up pilot project and 70,000-100,000 acres planned for utilities and pulp and paper industries. MN companies are dependent on aspen and are anticipating a shortage; hybrid poplars are one supplementary option. Additionally, there is a focus on improving water quality on the MN river where flood plain lands may be changed to tree application. In the past, the energy and fiber industries have been separated, but are now beginning to work together.

John Martin, Research Forester, Westvaco Corporation

He is dealing with traditional plantations, 60-70 feet tall, 18-20 years old, 8-10in. diameter. His problems lie not in harvesting but in cultural operations, specifically controlling competition. The backpack sprayers currently used are not effective or efficient. Although he does not see harvesting as a major problem, he is excited to come to the table early to see what problems will be down the road.

John Blake, Savannah River Forest Station, SC

Savannah River has 800 square miles of forest land managed under DOE policies, and thus the capabilities to put large scale blocks of land into short rotation crops. This site is secure, has long term environmental data, and also has the opportunity for off-site collaboration. His project's goal is to support DOE's interest and programs (i.e. Agenda 2020), identify avenues of opportunity for collaboration, and increase economic opportunities in the area. He believes the working group is the "only way to go" since they do not have the resources or interest to work separately.

Chuck Kaiser, James River Corp.

They are currently harvesting 10,000 acres each year. The farm will double in the near future. Priorities: 1) equipment development for year round access (currently use two sets of equipment for skidding and felling in order to handle both dry and wet seasons), 2) site preparation (took over 3 years to find equipment to handle post harvest preparation) and 3) cultivation (adapting agriculture for operations). He believes the group initiated in 1989 was too isolated and that this working group should be a clearinghouse--an organized central point to call and get questions answered.

Jane Turnbull, EPRI

A planned project is to do an assessment of harvesting equipment and systems to look at needs and prioritize to see what areas need most attention in the near term. Precision agriculture to improve productivity may become a high priority issue.

Frank Corley, Union Camp Corp.

Three years ago Union Camp initiated "intensive culture" program for pine, the same size tree in shorter time similar to Westvaco. Priorities: 1) weed control and 2) nursery scale-up and tissue (culture, larger and higher quality seedlings).

Larry Burkholder, Morbark Industries

His company deals with heavy equipment and material handling. They have been interested in wood for energy for the last 20 years, but it must be economically viable, and the market is lacking. Co-harvesting of fiber and energy is economically viable. They are developing equipment whereby pulp can be made from smaller material. Several operations include: Georgia Pacific, Weyerhauser, and Bowaters. The steering committee and working group are good for his company to see where "both" (energy and fiber) industries are going to get input to make analysis and develop equipment.

Tim McDonald, Research Engineer, USFS

Short rotation work is somewhat dormant within the USFS. He would like to see an industrial blessing which will then generate research.

Tom Houghtaling (via phone) - Minnesota Power Company

They are involved with a hybrid poplar demonstration project in NW MN--3000 acres planted on 5 year extended contract CRP land. They do not have harvesting needs at this time, but are interested in the mechanization issues. He sees the ultimate utilization for co-processing for energy and forest products. He is interested in the working group as a clearinghouse and as a place to go for helpful discussions.

The round robin discussion was closed by Bryce. He noted the working group could also facilitate information exchange with IEA. The working group could formalize a relationship to provide continuous exchange of information between the US and IEA countries.

MECHANIZATION ISSUES/CONCERNS

The group brain stormed and developed a list of issues and concerns.

- Plant propagation
    - mechanization of cutting production

        - tissue culture mechanization
        - clone/seeding quality assessment
- Site preparation
    - initial, post harvest
    - stump removal, coppice,
    - mechanical, chemical
- Planting
    - mechanizing of large seedling planting
    - co-treatments
    - precision agriculture
- Initial design
    - spacing and row design
    - mixing species
    - track size
- Special situations
    - riparian areas
    - wetlands
    - steep slopes, topography
- Best management practices and precision agriculture
- Cultural crop care
    - weeds
    - irrigation
    - fertilizer
    - pest control (insects, rodents, mammals, fungus, bacteria)
    - fire control
    - minimal energy use (CO_2 mitigation)
    - legume interplantings
    - use and disposal of soil amendments
- Harvest
    - felling (machine size to fit trees, speed, efficiency, cost, ground effects)
    - recovery and utilization on site, (logs, chips, solid wood)
    - multiple products
    - maintenance of soil nutrient levels
    - handling residuals
    - reduction of ground impacts (wetland issues)
    - process location (at stump, central, landing)
    - seasonal concerns
    - harvest residual handling (whole tree handling to mill location)
    - tree combine concept (fell, debark, chip)
- Processing
    - contamination reduction
    - product separation
    - chip quality
        - cost
        - pulverizing
- Transport alternatives
    - chip
    - shortwood, longwood, whole-tree
    - costs
- Inventory

    - mill storage vs. field storage
    - wood quality issues (moisture, decomposition)
- Environmental Issues
    - soil compaction

WORKING GROUP CHARTER

After the list of topics had been generated, discussion was focused on the working group and a review of its charter. The steering committee agreed that the larger working group should be open to anyone who had an interest in the topic.

Upon review of the charter the following comments were made:

- The genetics line under the objective doesn't really fit, and should be deleted in the objective (these activities are beyond the scope of this group, but important to acknowledge).
- The scope should be national with a possibility of regions developing.
- To define better the concept of "design" under scope, "integrated optimization planning" was suggested.
- "Short rotation" should be used instead of listing specific numbers (reaffirming size as the common link of different plantations).
- Establish a clearinghouse activity (perhaps part of "promoting exchange").
- Change "procuring" to "facilitating" funding under goals.
- Funding questions arose such as is the funding for research or the working group? Where would the additional money for the clearinghouse come from?

FRIDAY, SEPTEMBER 29, 8 A.M. - 12 P.M.
RECAP OF PROGRESS

The morning began with a discussion on the scope of the working group. There was some concern about becoming involved with a group that was pursuing "mechanization for mechanization's sake" and not working towards significant economic or environmental cost reduction. It was agreed that this was a concern, and that issues beyond mechanization are being dealt with. However, the formation of this group was still considered important partly because it would provide the"critical mass" necessary to make things happen.

After extended discussions of scope, the following was decided:

- Change from "Mechanization" Working Group to "Operations" Working Group to include the larger interests of the group, but to exclude the policy side and focus on the design and engineering facets of SRWC
- In the mission, change "needed mechanization" to "mproved operation"

DEFINE WORKING GROUP

Organization:

The working group has support from the DOE hierarchy. It also has received some funds for start up in FY96, Oak Ridge staff time (Bob and Lynn) and industry support would provide incentive to garner more research dollars. The working group will be housed initially in Oak Ridge, and the USFS has made a collaborative commitment. The question of how to organize a clearinghouse was discussed and decided to be dealt with later. The problems of limited access to Internet and the role of personal contacts was brought up.

DEFINE STEERING COMMITTEE

Possible additional members suggested:

- Producer/harvester
- Agricultural equipment manufacturer
- Other researchers-extension, university
- regional/sector representation

It was agreed that the steering group should be kept small, and that perhaps new people should be added after the working group is organized depending on who shows interest.

ROLE OF STEERING COMMITTEE

- organize working group meeting
- initiate clearinghouse
- mechanism for getting everything done

WORKING GROUP ORGANIZATION

- the working group is not a dues paying organization
- anyone who attends meetings can be a member
- the working group is not a symposium, but rather part of a development process
- many specifics will be determined at the working group meeting, including finalization of the organization role and charter

- the steering committee will organize/manage the working group, provide leadership and focus

CONFERENCE PLANNING

Operational rather than scientific conference (defining operational problems, building bridges, adding players, refining priorities)

The following draft agenda was proposed for a September 1996 date:

- 2-3 day conference with field trip
- Overview (keynote speakers)
- Technical Problem Area Speakers
- Other Speakers to Address Problems
- Problem Solvers
- Regional Reports
- Environmental
- Information Exchange/Process
- Interfaces
- Poster Session (researcher/vendors etc.)
- Business/Organization

A field tour was decided to be important, and that in order to maintain focus, the conference should probably not piggy back off of another event.

ADJOURN

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