[redacted]

No. CT-91/1

Not confidential - see letter of Nov. 18/91 from counsel for respondents #121. BB 91-11-18

THE COMPETITION TRIBUNAL

ORIGINAL

IN THE MATTER of an application by the Director of Investigation and Research for orders pursuant to section 92 of the Competition Act R.S.C. 1985, c. C-34, as amended;

AND IN THE MATTER of the acquisition by Hillsdown Holdings (Canada) Limited of 56% of the common shares of Canada Packers Inc.

COMPETITION TRIBUNAL
TRIBUNAL DE LA CONCURRENCE
FILED / PRODUIT
Facsimile copy filed on August 21, 1991
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B E T W E E N:

THE DIRECTOR OF INVESTIGATION AND RESEARCH

Applicant,

- and -

HILLSDOWN HOLDINGS (CANADA) LIMITED,
MAPLE LEAF MILLS LIMITED,
CANADA PACKERS INC. and
ONTARIO RENDERING COMPANY LIMITED

Respondents

AFFIDAVIT OF FRED D. BISPLINGHOFF

I, Fred D. Bisplinghoff, of the County of Lee, in the State of Florida in the United States of America, MAKE OATH AND SAY:

1. I have been a practising large animal veterinarian (5 years), general manager of animal feed company (5 years), executive vice-president of a midwestern U.S., privately held, rendering company (6 years), regional manager of the largest publicly held, and second largest in volume, U.S. rendering company (20 years). I am a consultant for the National Renderers Association, Rothsay, Animal Protein Producer Industry as well as consulting periodically for some of the largest rendering companies in U.S.; Tyson Foods (largest poultry operation in the

world); Nabisco; and several national feed companies. I am currently President and Director of Technicial Services for the Fats and Proteins Research Foundation, the major research organization serving the worldwide rendering industry. I am Chairman of the Animal Protein Producer Industry which addresses disease-related issues.

2. I have presented papers on the rendering industry, quality assurance procedures, trends in the industry, value-added products and many other rendering subjects in almost every developed and many un-developed nations in the world. Being one of the leading spokesmen for North American renderers enabled me to travel to all parts of this continent and confer with renderers as to their production, merchandising and profit planning activities. Presenting papers worldwide on all facets of rendering necessitated serious study of rendering and environmental problems. I average 30-40 presentations annually.

3. I had direct responsibility for four rendering plants, three restaurant grease operations, two fat blending plants, two protein blending plants and two hide processing facilities in the midwestern U.S. which afforded me the opportunity to observe and compete with practically all major U.S. rendering firms. I have been trained in and practiced budgeting procedures for twenty years with a cost control-concerned corporation giving me a broad background in planning for rendering profitability.

4. I have been retained by Maple Leaf Foods Inc., Rendering Division, to advise them on the methodology and technology of rendering, trends in the U.S. rendering industry, experiences with U.S. anti-trust actions in U.S. and current U.S. regulations pertaining to the importation of Canadian raw animal by-products into the U.S.

[redacted]

5. My ability to comment and advise Maple Leaf Foods Inc. is based on long personal experience in the North American rendering industry. I have also been provided with and have had full access to information from Maple Leaf Foods Inc. about its rendering operations.

6. Attached hereto as Exhibit "A" to this my Affidavit is a true copy of the report prepared for Maple Leaf Foods Inc. pursuant to their request.

Sworn before me at the)
County of Lee)
in the State of Florida)
this 2nd day of August, 1991.)

Fred D. Bisplinghoff, D.V.M.

Jaralynn R. Brink
A Notary, etc.

NOTARY PUBLIC, STATE OF FLORIDA.
MY COMMISSION EXPIRES: April 28, 1995.
BONDED THRU NOTARY PUBLIC UNDERWRITERS.

9460D/4-6

[redacted]

This is Exhibit "A" to the
Affidavit of Fred D. Bisplinghoff,
Sworn before me on the 2nd day
of August, 1991

Joan Lynn R. Brink
A Notary, Etc.

FRED D. BISPLINGHOFF, D.V.M.

August 2, 1991

[redacted]

CANADA PACKERS - MAPLE LEAF MILLS RENDERING PLANT MERGER IN ONTARIO

REPORT

of

Fred D. Bisplinghoff, D.V.M.

[redacted]

REPORT OF FRED D. BISPLINGHOFF, D.V.M.

A. WHAT IS RENDERING

1. The dictionary refers to rendering as the melting down of fat. After over 3000 years of a recognized rendering industry in Europe, many companies who cook by-products from the slaughter of animals are called "melters". On the North American continent we identify rendering as applying heat to the ground by-products from the slaughter of livestock, poultry and fallen animals. The common term used to describe this procedure is "cooking" and the main equipment utilized is called a "cooker".

B. THE RENDERING PROCESSING

2. Cooking breaks down the fat cells of animal tissue so that fat is released. Up until the early 1960's, there were two methods of cooking: wet rendering and dry rendering. In wet rendering, the material is boiled in a tank of water. This softens the tissues and allows the fat to break free and float to the surface where it is skimmed off. The fat produced by this process was relatively light in color, but the long contact with water increased the free fatty acid content. There was a practical limitation to the size of a wet rendering vessel and the process was labor intensive. Besides increasing the free fatty acid content of the fat, the soluble protein that dissolved in the water fraction had to be removed by dehydration or be lost is the waste water stream which created environmental problems. The high operating costs, problems in increasing capacity, increased free fatty acid content and lost protein value led to the process being completely replaced by dry rendering.

3. In dry rendering the fat is released by dehydrating the raw material in a steam-jacketed cooker. The dry rendering cooker ordinarily is a horizontal, steam-jacketed cylinder equipped with an agitator. It holds four to ten tons of raw material. The cooker is charged through a dome on top of the shell or it is charged from a blow tank. The end point in cooking is reached when the moisture content of the tankage is reduced to the point which gives best operation in pressing or other protein - fat separating techniques and, at the same time, not overcooking and degrading the protein quality. This is the most difficult and critical phase in dry rendering. The correct end point is just before the tankage is dry and still contains some moisture. From experience this temperature ranges between 240°-250°F. In this range the moisture content will usually be between 5 to 7 percent.

4. Dry rendered cookers, to a large extent, were replaced by continuous cookers starting in 1965 and this transition is still taking place. These vessels had a cooking cycle of 2 1/2 to 6 hrs., depending on the age and moisture content of the raw material. Since it is a "batch" type cooking system, there was much downtime for the vessels, high energy costs (cooling and heating cycle plus poor heat transfer properties) and a high labor requirement to load and unload the cooker. To completely clean the cooker so cooked material would not be reprocessed, an employee would have to scrape the bottom of the cooker with a long handled hoe. Again, as in wet rendering there was a practical limitation as to how many cookers could be placed in a high volume plant. Continuous rendering

allowed renderers to process the same or several times the volume in less plant space with significant labor and energy savings plus improved end product quality due to less holding time for raw material before processing. In the next few paragraphs I will describe the most popular continuous system operating in the world.

5. One of the first dry rendering continuous systems was the Dupps Continuous Duke Cooker. This 25/30,000 pound per hour cooker is 33 feet long and eight feet in diameter. Raw material is ground and is fed semi-continuous into the system. The material stays in the cooker for approximately one hour and is continuously discharged. The cooker holds approximately 60,000 pounds of material. The product is continuously agitated (the speed is important) and when it is released from the cooker, at approximately 265°F with 4-6 percent moisture, it is separated into protein and fat fractions by means of several screening devices. The protein is discharged to a screw press for defatting or further separation of protein and fat. The protein fraction is called dry rendered tankage or, a common term, cracklings. The fat is pumped to a centrifuge where small proteinacesous material is removed and then to a holding tank for washing or filtering. Flow diagrams and other information is in the back of the booklet marked Exhibit No. I.

6. Exhibit No. II contains a flow sheet of Dupps retrofit system. This is a modification that is similar to the new system, which uses the vapors from the drying operation to preheat the ground raw material or concentrate the soluble protein in the water from the centrifuge. The heated raw

material is fed into a prepress where the fat is separated from the tankage. The tankage is dried in the Dupps cooker or a disc dryer which was designed to dry wet tankage that contains a low level of fat (9-12%).

7. Exhibit No. III is a booklet which describes the Stord Bartz rendering systems. It contains flowsheets of their continuous rendering systems, which are similar to Dupps, and an excellent description of their waste heat/prepress dewatering systems.

8. If you will turn to Exhibit No. IV, you can see pictures of the various steps in the Atlas Process. In No. 1 raw material is being coarse ground. The ground raw material passes over a metal detector in picture No. 2 and in step No. 3 raw material is being fine ground. This fine ground raw material passes through a preheat conveyor or coagulator (160°F to 195°F), and then is drained over a strainer screw. Picture No. 6 shows the double screw press where the fat and tankage is separated. The high moisture tankage goes to the drier (discharge 250°F). Picture No. 8 shows the tricanters that separate the moisture with its high level of insoluble and soluble protein from the fat. The water is then passed through the waste heat evaporator which evaporates most of the moisture, leaving a thick concentrated glue water for further drying in the drier with the wet tankage from the double screw press (leaves drier at 6-9% moisture and 6-10% fat). Vapors from the drier go to the waste heat evaporator. The energy saving comes from trying to remove as much water as possible mechanically in the double screw press and using the vapors from the drying process to concentrate the soluble protein in the water.

9. Exhibit V shows the flow diagram of the Anderson C-G system. This is still one of the most popular cooking systems in the world. The very fine ground raw material is mixed with fat to form a slurry. The slurry is pumped through two heat exchangers and then to a centrifuge for separation of tankage from fat. The defatted tankage goes to an expeller or pressor for further fat and tankage separation. Some of the fat from the centrifuge is pumped to the fluidizing tank for remixing with new raw material. The heat exchanges are under a vacuum and the wasted heat from the second evaporator is used to preheat the raw material in the first stages or heat exchanger. The maximum cooking temperature is 250°F and the process produces a light colored crackling.

C. SOURCE OF RAW MATERIAL

10. The primary supply of rendering raw material is the offal from the slaughter of livestock and poultry, trim bones, fat and spent cooking fats and oils, called restaurant grease. The offal is generated at packing houses, integrated poultry operations and small slaughter plants termed lockers or custom killers. Bones and fat come from packing plants, meat fabricating or breaking facilities and supermarkets. The restaurant grease is supplied by 440,000 U.S. food establishments. Below is the approximate breakdown of the potential annual raw material available for U.S. renderers.

SOURCE CATEGORY	POUNDS
BEEF	16,100,000,000
SWINE	5,750,000,000
SHEEP AND VEAL	600,000,000
POULTRY	7,000,000,000
DEAD STOCK (fallen animals)	3,600,000,000
RESTAURANT GREASE	2,250,000,000
OTHER	700,000,000
TOTAL	36,000,000,000

National Renderers Assoc., 1989

11. Independent renderers classify the above raw material into two categories, captive and non-captive. Captive tonnage are the products that are generated from the slaughter of animals by large packing houses or integrated poultry operations. The operations are of such size that they produce sufficient raw material to warrant their own in-house rendering plant. The volume available for rendering 300,000 to one million pounds makes it a sound economic investment. This source of raw product, in most cases, will never be available to the independent renderers.

12. The advantages that vertical integrated operations have over independent renderers are:

    1. No transportation costs.
    2. Less conveying costs to cooker versus loading renderer's truck.

3. Produce superior quality fats due to rendering fresh raw material, i.e., eliminates haul time and holding time at independent renderer's facility.
4. Overhead can be combined with other duties, bookkeeping, supervision, maintenance, etc.

13. As mentioned above, one advantage that the large packer has over the independent renderer, bidding for his raw material, is the absence of hauling costs. These expenses are many times the highest individual costs associated with independent rendering. Once the truck is full, it is difficult to reduce costs per pound or per ton, since all handling costs, listed below, increase each year.

    1. Drivers wages and benefits
    2. Fuel and maintenance
    3. Vehicle costs
    4. Supervisor expenses

14. Renderers are constantly trying to minimize these cost increases by rerouting trucks and building receiving stations. Normally renderers can only economically pick up raw material within a seventy-five mile radius of the plant. There is a point of diminishing returns due to overtime hours, spoilage of raw material, and insufficient time to maintain trucks. The above conditions have led to building receiving stations, which can be constructed approximately 125-150 miles from the plants. Two to four straight trucks can operate from this facility, dump their loads onto an open top semi-trailer which can be pulled to plant by a tractor. This enables the renderer to service

an area approximately 200 to 250 miles from the plant, but it significantly increases the hauling costs as it adds reload and station costs to the route cost. This appreciably increases the overall haul cost but is an economical alternative to operating several plants at less than one-half capacity.

15. Low plant operating costs are essential to survival and the major elements in lowering plant costs are high volume and hours of operating. There is an efficiency volume relationship and receiving stations have enabled renderers to maintain reasonable plant costs by providing the means to procure raw material from long distances in a decreasing raw material availability situation. There may be no other source of raw material for the next 60 or 75 miles beyond the medium-sized cities and small packing houses that plants service. Routes can only cover a 35-50 mile radius resulting in trucks coming in partially loaded. This raises fixed costs. As individual raw material "stops" shut down, the costs of servicing a sparsely populated area increase dramatically. This is a major reason for renderers to consider purchasing other operations as one truck can easily service these areas.

D. FINISHED PRODUCTS

(a) ANIMAL FATS

16. Rendered animal fats and proteins are derived from the edible and inedible by-products that are generated at livestock and poultry slaughtering establishments. On the following page are typical yields from cattle and swine.

For cattle and swine, yields will vary from region to region, province to province and plant to plant because of the following reasons: 1.) Genetic type of animal and kind of grain fed. 2.) Length of time of fattening feed. 3.) Variation in how many and kind of organs or other by-products that are saved for pet food or edible use. 4.) Amount of fat left on consumer cuts. Please note that these yields include head, feet, viscera, trim bones and fat (supermarkets also). I have reviewed Maple Leaf Foods cattle and swine yields and my yields are within a reasonable range of their data when considering that their numbers do not include supermarket trim bones and fat.

BEEF AND DAIRY CULL COW - 1000 LB. LIVE WEIGHT (POUNDS)

	RAW PRODUCT	RENDERED FAT	DRIED BLOOD	MEAT-AND-BONE-MEAL
Offal (Head-feet-viscera- bone-trim) 385	50		120	
Hide	75		9	
TOTAL	518	50	9	120

MARKET STEERS AND HEIFERS - 1000 LB. LIVE WEIGHT (POUNDS)

	RAW PRODUCT	RENDERED FAT	DRIED BLOOD	MEAT-AND-BONE-MEAL
Offal	370	110		110
Hide	75			
Blood	58		9	
Edible Tallow	12	12		
TOTAL	515	122	9	110

MARKET BARROWS AND GILTS - 230-250 LBS. LIVE WEIGHT (POUNDS)

	RAW PRODUCT	RENDERED FAT	DRIED BLOOD	MEAT-AND-BONE-MEAL
Offal	40	7		7
Blood	8		1.4	
Edible Lard	12	12		
TOTAL	60	19	1.4	7

National Renders Assoc., 1989

17. If U.S renderers processed all of the 36 billion pounds of the potential available raw material, they would produce close to the same number of pounds of fats and animal proteins. Below are the potential pounds of animal fats produced from the available raw products.

ANIMAL	POUNDS OF FAT PRODUCED
Steers & Heifers	3,360,000,000
Cull Cows & Bulls	350,000,000
Market Pigs	1,992,000,000
Cull Sows and Boars	200,000,000
Broilers	780,000,000
Turkeys	126,000,000
Dead Stock	468,000,000
Restaurant Grease	1,500,000,000
Misc.	300,000,000
Total Pounds	9,076,000,000

National Renderers Assoc., 1989

18. The above figures include inedible fats, edible tallow, and lard. Naturally renderers cannot process all of the available material as some is sold as raw frozen or chilled into the pet food industry, some cannot be picked up due to location and has to be buried and for other reasons (volume, etc.) a small percentage is put into plastic bags and placed in dumpsters. The U.S. rendering industry estimates an approximate annual productions of 8-8.5 billion pounds of edible and inedible fats. Below are U.S. government 1990 estimates:

Inedible Fats	-	5,723,000,000 lbs.
Lard	-	452,000,000 lbs.
Edible Tallow	-	1,207,000,000 lbs.
Total		7,382,000,000 lbs.

Department of Commerce, 1990

19. The difference between the government figures and industry numbers is the volume estimated moving into the renderers' fats in feed markets. The Department of Commerce estimates are 2 billion pounds and industry estimates are 3 billion. Below are the government's 1990 domestic utilization estimates derived from their quarterly M20K surveys, that are mailed to U.S. renderers quarterly. The feeding fat is purchased by livestock, poultry feed mills and pet food companies. Livestock producers buy direct from renderers or fat blenders/dealers who purchase fat from renderers.

[redacted]

U.S. DOMESTIC INEDIBLE CONSUMPTION

Feed	2,013,000,000 lbs
Fatty Acid Industry	722,000,000 lbs
Soap Making	397,000,000 lbs
Lubricants	110,000,000 lbs
Other	43,000,000 lbs
Total	3,285,000,000 lbs

20. The following are industry estimates of inedible fats utilized in the feed industry in 1987 and projections for 1991:

2. ESTIMATED USAGE OF FATS IN ANIMAL FATS

(Millions of Pounds)

Type Of Feed	Yellow Grease	Added Fat	Yellow Grease	Added Fat
Swine	160	250	250	300
Beef Cattle	195	240	200	250
Dairy Cattle	55	100	50	200
Broilers	310	1025	400	1200
Layers	15	30	20	35
Turkeys	120	350	300	500
Dogs	90	365	50	400
Cats	20	75	10	100
Other Species (Veal)	20	40	25	50
	985	2475	1305	3035

(1) SRI International 1987
(2) Fats and Proteins Research Foundation

(b) ANIMAL PROTEINS

21. Utilizing the aforementioned yield information and yield data on other species, fat and bone trimmings, etc., the National Renderer's Association estimated the 1989 U.S. production of animal proteins by species.

Source	No. Slaughtered or Lbs. of Product	Total Protein Sold Lbs.
Steers & Heifers	28,1000,000(1)	3,360,000,000
Cull Cows & Bulls	7,000,000(1)	910,000,000
Market Pigs	83,000,000(1)	1,328,000,000
Cull Sows & Boars	5,000,000(1)	150,000,000
Broilers	5,200,000,000(1)(2)	1,872,000,000
Turkeys	242,000,000(1)(2)	419,000,000
Dead Stock	3,600,000,000	792,000,000
Misc.	----	250,000,000
Total Pound		9,081,000,000

(1) Includes Blood Meal

(2) Includes Feather Meal

National Renderer's Assoc., 1989

22. Production of inedible animal proteins and fat have remained rather stable for the past several years, due to increased poultry slaughter offsetting the small decrease in cattle slaughter.

E. TRENDS IN U.S. RENDERING INDUSTRY

23. Several factors have led to the substantial reduction in U.S. independent rendering facilities over the past twenty years. In the early 1970's the National Rendering Association estimated there was approximately 700 rendering plants in the U.S. with over 600 being independent renderers. Below are the results of a 1989 survey conducted by the Animal Protein Producer Industry, but since the survey several plants have closed.

CATEGORY	PLANTS
Independent Renderers	182
Packer Renderers	98
Poultry Processors	56
Total Number of Plants	336

24. The striking statistic is the marked reduction in number of independent rendering facilities. This is due to:

1. Closing of small plants by large rendering companies and diverting tonnage to more efficient and larger facilities.

2. In 1956 National By-Products had over 30 plants in Iowa. Today they have two. Due to marginal profits of many companies caused by the decreasing volume of raw materials and lower commodity prices many renderers sold their plants to other companies who diverted the tonnage to large volume facilities.

3. Construction of large integrated packing houses with closing of medium and small packing plants.

25. Later in this paper we will address the above scenarios and the world glut of fats and oils but, as a source of information and to better illustrate the (fat in feed) one dimension growth market for inedible tallow, I have accumulated the Department of Commerce's statistics for domestic consumption for inedible tallow for the past 7 years. Without the increased fats in feed market, there would be a much larger surplus.

U.S. INEDIBLE TALLOW DOMESTIC CONSUMPTION
Millions of Pounds
Fatty

	Feed	Acids	Soap	Lube	Other
1984	1,343	728	625	60	184
1985	1,364	762	535	63	57
1986	1,604	739	482	62	32
1987	1,726	678	571	72	33
1988	1,864	717	461	70	34
1989	11919	670	367	71	40
1990	2,028	722	397	110	43

Source - Bureau of the Census

26. As we experience flat growth in all domestic markets, except the feeding fat area, our previously growing export market declined. World consumption of fats and oils has been going up by 3% per year with world output increasing 6%. With the health concerns associated with animal fat consumption the market for edible tallow has shrunk, with only a one cent price differential between edible and inedible. Therefore, edible is replacing inedible in overseas markets (fine soaps) and many traditional domestic markets such as milk replacers, fatty acids and expensive bar toilet soaps.

27. The below charts illustrate the decline of exports for inedible tallow.

EXPORTS OF U.S. TALLOW/GREASE
(in Million of Pounds)

	Edible		Inedible
Year	Tallow	Lard	Tallow
1984	54	89	2,706
1985	51	105	2,718
1986	58	105	2,502
1987	64	106	2,371
1988	133	127	2,693
1989	202	110	2,394
1990	252	37	2,028

Department of Commerce

The increase in edible exports were solely to Mexico. Inedible exports to Mexico declined by the same amount as edible replaced inedible in our Mexican markets.

F. TRENDS IN AVAILABILITY OF RAW MATERIAL

28. Listed below are long time developments in the meat packing industry and other areas of the meat industry that have had significant impact on the availability of raw material for the independent renderer.

29. Evolution of The Large Integrated Packing Plant - Kills of 4,000 a day are not uncommon for large beef plants. The efficiency of size allows them to render their own inedible by-products. This is also true of pork and broiler (poultry) operations. One of these new efficient high speed plants replaces the total output of several medium and small slaughterers, who sold their raw material

to independent renderers. One small packer estimated that Iowa Beef, Cargill and Monfort had a $75.00 per head processing cost advantage over their operation. Continuous rendering played a part in assisting the large packer to build high volume and speed plants. With continuous systems capable of processing 30-50,000 pounds per hour of raw material, the large packers could process their daily 300,000 to 1,000,000 pounds of raw material volume in a small square footage adjoining building. The independent renderer classified the small packers as critical high volume accounts. Without their raw material, the industry had to, and is, consolidating.

30. Lower Kill at Locker Plants and Custom Slaughtering Facilities - This volume has been the backbone of the renderers serving small cities as well as large urban areas. Livestock producers and small city dwellers prefer to purchase their meat "at the store" versus storing it in a home freezer. The 1940's to 1960's generation appreciated the cost savings but their children do not want to bother with the hassle that is associated with this chore. Dean Carlson, President of National By-Products, the largest renderer in the world that services locker plants, states that this tonnage has been slipping at 6% per year for the past 10 years. National By-Products plant at Mason City, IL reports that their locker plant volume is 40% of the 1975 level and the decline is continuing.

31. Loss of Tonnage at the Street Level - Not only are the large packers with their captive tonnage getting larger but they are trimming more fat and bones from the carcass

at the packing plants. Instead of shipping carcasses (pork and beef) to breaking or fabrication plants and supermarkets, they are fabricating the carcass into primal, sub-primal and consumer cuts at the packing house (boxed beef). With the public's obsession with not eating fat, they are now trimming almost all fat from cuts before shipping. Fat and bone trimming that had the highest yield and produced superior fat grades (color, hardness, free fatty acid content) are rapidly disappearing from supermarkets, fabricators, etc. Street renderers must now be content with spoiled chicken, cold cuts, paper and pop cans in their containers. This is low yielding and produces poor quality fats and proteins.

32. Reduction in Dead Animals - Two factors affect this trend. One is the reduction in numbers of cattle and swine on farms which is directly linked to the continued reduction in per capita red meat consumption. The second item is the reduced death loss on the larger livestock production units. Improved management and veterinary services equate to fewer dead animals. This trend will continue in the future. Exhibit No. VI illustrates the trends in the raw material supply chain profile.

33. Development of New Technology - Another important factor shaping the industry's structure is the substantial improvement that is taking place in the development of new technology in the livestock and meat industries. Dr. R.O. Ball, of the University of Guelph, believes that the meat industry will soon be able to reduce the total fat with a concomitant increase in muscle mass in the carcass. This achievement will be driven by a combined consumer demand for wholesome meat with reduced fat and economic pressure

to produce meat more efficiently. Regulation of the endocrine status and metabolism of the animal for improved performance, carcass composition, and to a largely unknown extent, meat quality, with new technology has recently evolved.

34. Some of these new approaches, which are in various stages of experimentation and government approval are; 1. Oral administration of beta-andrenergic agonists, 2. Injection of somatotropin, and 3. Transfer of cloned genes into the geome of farm animals. Improvement of 7 to 25% in growth rate, 10 to 30% in feed efficiency, 7 to 30% in muscle mass, and a 12 to 32% reduction in carcass fat, with little adverse effect on meat quality, have been achieved in animals using these various approaches. These new technologies hold great promise and will be in use in many meat animal production centers in the world before the turn of the century.

35. Another very important effect that has been ongoing for many years, and is receiving continued impetus, is generic selection for lean growth rate in all classes of meat animals. We know from watching the swine industry that the lean growth rate, lean tissue feed conversion and lower fat content of the carcass can be improved through consistent performance testing and selection. The European swine industry has led the way in demonstrating the improvement in lean meat production that can be achieved with genetic selection and proper management and the beef industry is rapidly following this lead. At a recent U.S. meeting of the research committees of the National Live Stock and Meat Board two projects, at a cost

of over $600,000, for three years, were approved to accelerate research on lean beef production. These trends will influence the availability of edible and inedible fat trimmings in the next decade.

36. All of the above factors have lead to a drastic reduction in raw material available to street renderers. Exhibit VII traces the trends in raw material available to the independent renderer from the 1970's (yesterday) to 1990 (today) and in 1995-2000 (tomorrow). It is a well known statistic that the independent renderers share of raw material (non-captive) has dropped from 70% (1975) to 30% today and the decline continues. With this reduction came the necessity to close plants as was shown earlier in the table on page 14 of the reduction in U.S. rendering facilities. Moving in concert with the reduced raw material availability, was the improvement in rendering plant technology that permitted increased tonnage throughput (pounds per hour) and the need to separate raw material to produce better quality fats and value-added products. (Exhibits I through V).

37. Restaurant grease is the only raw material growth area for independent renderers. It yields a poor quality fat which has a low value and it requires minimum plant space. One large restaurant grease plant could process all the restaurant grease in Eastern Canada. Recent improvement in procuring this product allows the grease collector to use semi-trailers to load, at the restaurant, containers that contain up to 2000 pounds.

F. ACCELERATED CLOSING OF MODERN RENDERING FACILITIES

38. What proof do we have that these plant reductions took place? The answer can be found by reviewing the major population centers on the North American continent.

39. New York Metropolitan Area - Largest in N. America and perhaps in world. Seven large continuous plants in the early 1980's. Today there are two (one large and one small) continuous plants operating at two-thirds capacity. In the early 70's New York City had five large rendering plants. None today.

40. Los Angeles Metropolitan Area - Twenty years ago this growing population center supported four large volume rendering plants operating 24 hours a day, six days a week. Today there are two plants operating at two-thirds capacity in an area that is doubling its population every 16 years. There are twice as many people but one-third the rendering tonnage. A major change is taking place.

41. Chicago Metropolitan Area - This was the mecca of U.S. rendering for many years. The city itself supported three giant plants and several smaller ones in 1975 (one being the largest in the world). Six more plants were within a few miles of the city limits. TODAY THERE ARE NO PLANTS IN THE CITY. One medium-size batch cooker plant is operating in Joliet, Illinois. The small amount of raw material that remains in Chicago is reloaded to Indianapolis, IN, Milwaukee, WI and Mason City, IL.

42. Exhibit VIII is a map that locates major independent rendering plants in the midwestern U.S. There are no

plants in Chicago and it is only identified to give a clearer picture of the distance between facilities. Plants, other than those indicated below, are marked on map are small deadstock plants or they are processing raw material from a medium size packer or general purpose plants but do not pick up in Chicago area.

1. Darling - Milwaukee, Wisc., 89 miles from Chicago. Darling reloads their Chicago raw material to this plant. This operation covers a very large area.

2. Kaluzney Brothers - Joliet, IL., 30 miles from Chicago. Small batch cooker plant. Picks up in a 75 mile radius around Joliet.

3. National By-Products - Mason City, IL., 190 miles from Chicago. National reloads part of their Chicago tonnage to Mason City. Mason City main raw material sources were locker plant, supermarket and deadstock. It is the only renderer servicing the Peoria/Pekin (350,000 pop.), Bloomington/Normal (200,000 pop.), Champaign/Urbana (125,000 pop.) and Springfield (200,000 pop.) metropolitan areas as well as the upper two-thirds of Illinois which is one of the most populated states in U.S.

4. National By-Products - Indianapolis, Ind. Indianapolis has a metropolitan population of over one million. This National By-Products plant receives raw material from receiving stations in Chicago, a reload in the greater Cincinnati area (1.4 million population) and the states of Indiana and Kentucky.

5. Plymouth Rendering - Plymouth, Ind., 60 miles East of Chicago. Their main raw material is poultry offal from spent hens, deadstock and products from a horse slaughtering plant.

43. The above five plants of varying capacity cover an area of approximately 125 miles North of Chicago, 96 miles West, 260 miles Southwest, 300 miles South, 325 miles Southeast, 160 miles East and 70 miles Northeast. The population in this area is approximately 15 to 18 million. When I became active in the rendering industry in 1956, there were 31 plants within these boundries. I predict in five years this same area will have only two plants, Milwaukee and Indianapolis.

44. The management strategy to reload Chicago raw product to increase the throughput at these outlying facilities could be applauded if it was not for the fact that these plants are still running at one-half capacity.

	PLANTS		COMPANIES
CITY	1979	1991	1991
Detroit	4	1	1
Cleveland	3	1	1
Philadelphia	4	0	2 in area

There is ample proof that the raw material available to independent renderers (non-captive tonnage) has reduced dramatically in the past 20 years and at an accelerated pace since 1984. This has led to plant closings, consolidations and buy-outs. The raw material pool will continue to shrink and fewer plants will be operating in 1995. I do not know the exact percentage of multi-plant

ownership in the U.S. There are very few large independent single plant operations left. Most of these plants are medium-sized or small facilities that service one major account or collect strictly restaurant grease and deadstock. The advantages of multi-plant ownership are: reduction of per unit management overhead, increased surviving plants' volume, avoided duplication of routes, standardized service to supermarket chains that cover large areas, better segregated raw material for value-added products and improved marketing leverage both domestic and overseas. Unless a renderer sells to a dealer who pools products from many sources and discounts the purchased products, he must put a reasonable volume parcel together to ship material overseas. Other advantages to multi-plant ownership include purchasing in volume and a better ability to afford an improved quality assurance program, etc. Therefore, we must focus on one important item - how can four renderers afford to dispatch trucks along the same streets in the Toronto area and arrive at plant less than full or if need be, drive many unnecessary miles to obtain a reasonable pay load? This continued waste of money is unnecessary in an industry faced with low commodity prices and an uncertain future. U.S. rendering is not a profitable business today and the outlook is guarded.

45. Another important factor that enabled a renderer to close plants and move the tonnage to one large operation, as the tonnage decreased, was the new technology in processing. As mentioned earlier, the first continuous cooker processed approximately 25,000 pounds per hour, but today we have improved systems that process up to 50,000 pounds per hour. A typical U.S. independent renderer with a

Dupps Duke Heated Bundle Cooker can process 35,000 pounds per hour or approximately 500-700,000 pounds per day depending on yield and amount of downtime required for maintenance. Many plants have two systems operating in tandem, but a typical U.S. plant will process 2 - 4 million pounds per week. Continuous dry rendering allowed renderers to concentrate their cooking operations into one plant and this is another factor why only one operation is required to service a large metropolitan area. There are plants in the U.S. that process over 5 million pounds of raw material per day, which is more than the non-captive raw material tonnage available in the Provinces of Ontario and Quebec.

G. GOVERNMENT ANTI-TRUST ACTION

46. With plant closings and buy-outs going forth at a rapid pace the logical question is, has this trend reduced service and competition to a point that the government has taken action? The answer is an unqualified no. Why ? After careful analysis it has become apparent to anyone with any knowledge of animal agriculture that our meat packing and poultry industries are changing, eating habits of people have modified and livestock numbers are stable. The industry that the independent renderer served is disappearing. The American Meat Processors Association (locker plants) vigorously protested to federal agencies and the rendering industry for reducing service. Upon questioning their leadership, all admitted that their kill was off 50% or more and some believed they would be closed in 2-3 years. They answered their own complaint. Darling and Co., purchased all competing plants in Cleveland, Detroit, Dallas, Houston, Buffalo, Philadelphia and

several other major cities. There was no action because in all cases there was only sufficient business for one plant running a two-thirds capacity. Who would wish to operate another plant and compete for the balogna ends and spoiled chicken wrapped in polyethylene? One major reason no one would attempt such a fool-hardy excursion is not only the shortage of tonnage to operate efficiently, but the increased environmental costs associated with operating a rendering recycling plant. Meeting more strict environmental standards is a yearly occurrence. This raises what are, in effect, non-productive fixed costs and, in some operations, it is the highest cost item.

47. A one to two million dollar expenditure for air or water pollution control equipment not only raises the total equity investment of the operation but this new machinery has to be maintained and someone must operate it. As mentioned earlier it raises operating costs which makes it difficult to produce a proper after tax profit. It will soon be impossible to duplicate environmental control equipment in a given trade area. Exhibit No. IX is a rendering flow diagram. Please note that approximately 50 - 55% of the incoming raw material must be treated as waste water after cooking. It will become more economical for one renderer to close his plant and sell to another rendering facility. This option will be discussed later.

48. In the few instances in which the U.S. government did initiate anti-trust proceedings, the results were unfortunate. One example is the case of California Rendering Co., in Los Angeles. In the early 1970's, Baker

Commodities in Los Angeles purchased California Rendering Co., one of the three largest plants in L.A. They were losing money and their plant needed substantial expenditures to meet new environmental regulations. Tonnage was eroding and the owners realized that there would not be sufficient raw material for three large plants within a few years. Raw material suppliers complained and U.S. anti-trust action was taken. Litigation continued for years, but eventually Baker had to divest themselves of California Rendering. California Rendering continued to struggle, they borrowed money to install minimal environmental equipment but were constantly being harassed by local and state officials. Within a few years they were facing bankruptcy but Darling and Co., came to their rescue and purchased the company. A few years later, Darling and Co. purchased the third L.A. plant, Petersen Mfg. Co., (a much larger operation). There was not one word spoken about competition or anti-trust, etc.

49. At this point the U.S. government recognized what the whole world had known for years, animal agriculture, the packing industries, environmental requirements and eating habits were changing and the consolidation of the rendering industry was a prudent and necessary action.

H. <u>IMPLICATIONS OF DECREASED VOLUME ON COSTS</u>

(a) PLANT

50. Most rendering operations in U.S. and Canada use a budgeting procedure to maintain a volume/costs/profit relationship and to project the trends of the industry for

the next one to five years. In every operation there is a given amount of fixed overhead that cannot be reduced, regardless of throughput i.e., - depreciation, taxes, management expenses, environmental costs, some maintenance expenses (buildings, major equipment) and many others. As tonnage decreases these costs continue and in many cases become higher per pound than the more visible costs such as labor, energy and preventive maintenance. One variable cost, energy, does not decrease proportionally with lower throughput. It takes the same energy to start the operation and same loss on shutting down regardless of operating hours.

51. If a plant is running at 80% of capacity and the throughput is reduced by 6% per year (assuming average yields), costs are normally reduced by only 2-4%. Eventually the plant has to be closed and the tonnage shipped to another facility or the owners sell the raw material to a competitor. One seldom mentioned aspect to the increased cost of rendering today is the loss of the high yielding raw material such as fat and bones. We calculate raw as well as finished costs. The higher the yield, the less water that needs to be evaporated and the free fat assist in increasing throughput (referred to as "french frying"). The higher the yield, the more finished material to sell, thus lower finished material per unit cost. With the large integrated packer breaking and fabricating the carcass at the slaughtering plant, the high yielding products are lost to the independent renderer. This development drops the raw material yield which leads to increased costs (more moisture to remove) and lowers the fat quality.

52. Up to this point we have discussed many factors that influence operating costs. This increased per unit cost, whether it be from lower volume, higher territory cost or increased prices of replacement parts, has a negative impact on the ability of renderers to make a proper return on their investment. Capital expenditures for environmental control equipment, machinery to produce improved end products to meet stricter customer specifications and other non-productive overhead expenditures, significantly increases the total investment. With higher operating cost and increased investments on lower volume, renderers are unable to obtain a 20-22% before-tax cash flow on their equity. Holly Farms, Inc., owner of National By-Products (11 rendering plants) until 1989, suggested that all rendering operations, including their three integrated rendering facilities, budget a 20-22% before-tax cash flow. In budgeting seminars it was demonstrated, to management, that unless the 20-22% was achieved the company would eventually have insufficient capital to purchase replacement machinery and build replacement plants in an economy with 5% yearly inflation. The conclusion reached was that all plants had to run at 80% or above capacity. This level could be accomplished by closing some plants and diverting raw material, purchasing competing plants in area, processing all raw material in the most efficient facility and producing value added products.

(b) TERRITORY

53. It is sometimes difficult to decide if lower volume has a greater impact on plant or overall territory costs. Below is a typical structure of a rendering territory:

1. Territory Supervisor - Overall manager and may have an assistant. Manages the routes for maximum tonnage in the least amount of hours and miles.

2. Fleet Manager - Mechanics report to this person. Responsible for fleet.

3. Dispatcher - Reports to Territory Supervisor.

4. Route Drivers - Procures raw material in some type of large vehicle with bed.

5. Receiving Station - Land, buildings and utilities needed to reload on to trailer.

6. Reload Route - Hauls raw material from receiving station to plant.

The above structure may vary among companies, but the impact of lower volume is a constant factor in any type system. When the tonnage drops 6% per annum there are very few realignments that can be made. With continued significant drops, some routes can be combined, but there is a limit since you must service customers in all directions and lockers on their kill days.

54. Another step could be cutting back on service and realigning routes. This means some raw material will be left in territory for longer periods of time and begin to deteriorate. There is a limit to cutting service to locker plants and custom slaughtering operations or even medium-sized slaughtering facilities. State and Federal

[redacted]

inspection laws dictate that these plants must be picked up on their kill day. Many routes are designed around these large-volume accounts. As their kill drops, the renderer continues servicing the same area for 25 to 50% fewer pounds. Costs accelerate and the route loses money. The above scenario took place in Chicago and upon careful analysis the owners discovered that their three plants in Chicago had trucks running up and down the same streets and each contained one-third of a load. The economics of three plants and one hundred route trucks operating at one-third capacity can not be tolerated over the long haul. The answer was consolidation. One company purchased a competitor, but as stated earlier, eventually all Chicago plants closed.

An illustration of lower tonnage on route costs is given in the next section, "Implications On Raw Material Suppliers".

I. IMPLICATIONS ON RAW MATERIAL SUPPLIERS

55. I previously addressed the complaint of the American Association of Meat Processors in regard to less service and lower prices. Unfortunately, the suppliers of the rendering industry have been damaged by the industry changes to almost the same degree as the renderer. This part will discuss some of their problems.

56. For example, locker plant suppliers have had to accept lower prices for their material due to overall low worldwide fat and oil prices, less volume, which means increased route costs for the renderer (these increases

must be passed on to supplier) and less volume which dictates fewer pick-ups at locker plants. Some raw material must be kept refrigerated between pick-ups to prevent spoilage. This increases their operating costs.

57. The general experience of supermarket suppliers of renderable material is similar. Lower yielding raw material from supermarkets, and lower worldwide fat prices, impact the price renderers can pay. In some cases, supermarkets must pay for service.

58. Moreover, lower volumes mean fewer pick ups and the additional costs of refrigerated storage. The above leads us to the challenge of how rendering services will be structured in the future. If the supermarket or locker plant does not have enough volume or high yielding raw material, then the gross product value of the by-products picked up will not be sufficient to cover the cost of pick up and plant costs. For example: assume the renderer picked up 300 lbs of raw material at store A, with twice a week pick up, 300 lbs yielded 25% fat and 20% protein, (Use to be 60% fat and 20% protein)

Revenues are:

1.	Fat Price	= 12 1/2 ¢ pound or $12.50 per cwt.	
2.	Protein Price	= 10 ¢ pound or $10.00 per cwt.	
3.	25% fat	= $3.125	Value of fat in raw raw product per cwt.
4.	20% protein	= $2.00	Value of protein in raw product per cwt.
5.		$ 5.125	Gross product value of raw material per cwt.
6.		$15.375	Gross product value of 300 pounds.

Costs are:

1.	Direct Route Cost =	$2.50 Cwt Raw
2.	Receiving Station Cost	.50 Cwt Raw
3.	Reload to Plant Cost	.75 Cwt Raw
4.	Plant Cost	1.60 Cwt Raw
5.	Sales & General Supervisor Cost	.40 Cwt Raw
6.	Overhead Cost	.30 Cwt Raw
7.	Total Cost for 100 lbs	$6.05 Cwt Raw
8.	Total Cost for 300 lbs	$18.15 Cwt Raw

Without profit the raw material has a negative product values. The renderer must change to cover his basic costs and something for profit. The question that needs to be answered is, what happens when the yield is reduced 5% and the volume drops to 250 lbs per pick up? This illustrates the dilemma in which everyone finds themselves. No one is at fault.

59. The current scenario for today's renderers and suppliers is:

1. People are eating less red meat.

2. Livestock is being slaughtered at large packing houses that fabricate the carcasses to sup-primal and consumer cuts, which means less fat and bones at stores.

3. There are no trimmings from poultry as it is pre-packaged.

4. Prices of finished material do not accompany inflationary increases as there is a worldwide glut of fats and oils and prices are going down rather than up.

5. By products are increasingly rendered in captive plants.

6. There is a reduced need for rendering services Consolidation takes place, but tonnage continues to dwindle.

7. Remaining renderer must charge for service similar to other service industries. The stores, etc. must have service for removal of perishable raw material.

J. PRACTICES INITIATED BY RENDERERS TO OVERCOME LOW VOLUME/INCREASED COSTS DILEMMA

60. Below are innovative management strategies and procedures that have evolved during the past few years in the rendering industry.

First, the renderer can cease picking up deadstock and assist qualified individual to purchase vehicle and run route as contract hauler. With no overhead and more personal contact with customer, these individuals can continue service and at the same time have other part-time employment. The same system can also be employed for outlining low volume scap routes. Ideal situation for a driver who has other part time employment. Approximately 15% of raw material in U.S. is picked up by independent collectors and sold to rendering companies.

After World War II many small rendering plants closed and became independent collectors. This has continued on for over forty ears and in some cases as high as 80% of a renderer's tonnage was picked up by these contract haulers. Renderer pays a fair delivered price to plants.

61. Many times large renderers have closed plants but have continued their routes and sold the raw material to other renderers in the area. This practice eventually plays out because the volume usually drops, and the companies cannot afford to run their trucks at less than two-thirds capacity. In some cases, suppliers have formed a corporation and developed a cooperative rendering plant. This has taken place in poultry areas as no one company is large enough to build their own facility. This becomes captive raw material and is no longer available to independent renderers.

62. In the case of largest rendering plant in the world at Cumming, Ga., the renderer "custom processes" (does toll rendering) for medium-sized poultry processors in the area. They are required to purchase back their proportional share of feather meal, poultry by-product meal and poultry fat based on agreed upon raw material yields. The renderer charges a contracted processing and handling charge. The inventory is owned by the raw material suppliers. The key aspect of this arrangement is the raw material becomes semi-captive tonnage and is no longer available to the average independent renderer.

63. The major development undertaken by renderers to cope with the changes in raw material volume is the purchasing of competing plants in their trade area. As mentioned previously, Darling, the largest renderer in the world, has purchased all the plants in many metropolitan areas. They now operate approximately 40 plants and are the only renderers in many geographical areas. National By-Products has 11 plants and dominates the Midwest. Griffin Industries has 16 plants and is the only renderer in most Southeastern states. Baker Commodities, with 9 plants, are the principal renderer in many areas on the West Coast and New England. There are many instances, where one company services an entire state. Where there is competition, there is only one other renderer in 70% of competing areas. It is uncommon to find more than two renderers servicing a given rendering territory.

K. IMPACT OF RAW MATERIAL TYPE AND VOLUME ON FINISHED PRODUCT QUALITY

64. As mentioned earlier, the loss of fat and bone trimmings has severely downgraded the renderer's fat quality. Below are the specifications that are usually applied to animal fats purchased by the chemical and soap industries.

	TALLOW	C. WHITE GREASE	YELLOW GREASE	HYDROLIZED A/V BLEND
Total Fatty, %	90	90	90	90
Free Fatty Acids, %	4-5	4	15	40-50
FAC COLOR	19	11A	37-39	45
Moisture, %	0.5	0.5	1.0	1.5
Impurities, %	0.5	0.5	0.5	0.5
Unsaponifiables, %	0.5	0.5	1.0	2.5
Total MIU, %	1.0	1.0	2.0	4.0
Iodine Value	45-58	58-68	58-79	85
AOM, hours	20	20	20	20
Fatty Acids				
Lauric/Myristic	3.5	1.0	1-3	2.5
Palmitic	26	26	26	18-24
Steric	19.5	11.5	12-18	7-16
Oleic	41	58	45-55	35-50
Linolenic				2
Linolenic	2.5	8-10	15-20	22-28

65. The highest price is paid for the top grades. The price declines as the free fatty acid increases and color darkens. The products that produces the highest grades, fat and bone trimmings, are now being rendered by the large integrated packer/renderer and they sell into these premium markets. The independent rendering industry is relegated to picking up poorer quality raw material, hauling it further (more spoilage) and producing lower grades of fat. Since there are not sufficient profitable markets for all of the lower grade fats, the independent renderer must upgrade their fat by expensive refining processes. This entails removing most of the free fatty acid, bleaching for color and filtering to remove impurities. These are costs that must be born by the renderer, but their finished product competition, the packer renderer, does not have these expenses which gives them a major advantage.

L. COMPETITIVE FACTORS THAT SHOULD BE CONSIDERED

66. The Toronto area is blessed with more rendering plants than most metropolitan areas in North America as well as having rendering plants within a reasonable distance in the U.S.. All raw material except deadstock can move freely across the U.S. Canadian border. Therefore, U.S. renderers can compete aggressively with Canadian renderers and vice versa. Since the Toronto area has more active rendering plants than any large U.S. city, the purchase of one company by another would leave three competing companies, plus several independent contract collectors, competing for the dwindling raw materials. More competition than anywhere else in North America or in fact in some cases three times as much. If Darling closed their Canadian plant, they would haul the raw material to their prominate U.S. facilities and continue to be an active competitor.

67. There are no tariffs on raw or finished product. The Canadian renderer must be allowed to become competitive so as to compete with the U.S. renderer for the Canadian fat and protein markets. Taylor Packing Co., and other integrated packers, with their in-house rendering facility, sell finished products into Canada. These plants can produce a uniform meat and bone meal and a high titre, good colour, low free fatty acid tallow. Rothsay would be seriously handicapped in its ability to compete with these high quality products unless it can merge with Orenco and produce similar high quality tallow and uniform animal proteins by utilizing Orenco's in-place

protein-blending facilities. With the purchase of Ontario Rendering by Maple Leaf Mills, Ltd., there will be a high level of finished material competition. If Canadian renderers cannot consolidate and cut costs similar to their American counterparts then eventually U.S. renders will service the area. The Canadian rendering industry is asking for an even playing field in a rapidly changing livestock and meat environment.

M. MAPLE LEAF MILLS (ROTHSAY) NEEDS TWO PLANTS IN AREA

68. One very important item has been overlooked in the discussion of this merger is the ability to produce and sell value-added products in today's marketplace which is critical to profitability. The U.S. anti-trust department would never consider investigating a potential purchase of a meat renderer by a renderer whose raw material base was primarily poultry offal. Their raw material is entirely different and the finished products are sold into specialized markets. The poultry renderer must sell value-added products to survive and Rothsay/Moorefield is primarily a poultry by-products renderer. They have special equipment to process feathers and poultry blood; they also market poultry by-product meal and feather meal. These products cannot be adulterated with finished products derived from red meat raw material. They do not have ample capacity to process all of the other raw material in the Toronto area at the Moorefield plant, but it should be able to process all of the close-by raw material as it is doing now.

69. Moorefield is a specialized plant and two-thirds of its cooking capacity is out of the scope of this hearing. Renderers must be able to segregate the different types of raw material to achieve the highest value possible for their finished products. As the poultry industry grows in Canada, Moorefield could some day be a one hundred percent poultry plant as are many in U.S.. All other raw material except some local by-products will have to go to Ontario Rendering. Rothsay/Moorefield comes to this proceeding with only their "red meat" tonnage under consideration. The question is: Can a Canadian company with some "red meat" tonnage purchase a Canadian rendering plant and compete with two Canadian and two proximate U.S. rendering facilities? This question would not receive one minute of consideration by U.S. authorities.

N. CONCLUSION

70. In our society we are experiencing continued change. One industry that is undergoing an evolution and is visible to almost everyone is the newspaper business. Many years ago every large U.S. city had 3 or 4 daily newspapers. As competition from radio, T.V. and the electronic media grew, the papers lost subscription revenue and when they tried to consolidate a loud protest was heard from advertisers, subscribers and government agencies. Eventually some weaker ones went broke. Finally, after many years, everyone decided that the electronic media was here to stay and they allowed newspapers to consolidate. Today most major cities have one paper and many are losing money. The point I wish to make is, the suppliers to the newspapers had to consolidate as well.

71. One can compare the packing industry to the newspaper business. For the past thirty years there has been a massive consolidation and the industry who supplied, or in this case, serviced the packing industry also had to consolidate. If there is a competition problem then the packing industry should be investigated. This was done in U.S. and the government lost!! The consolidation of the rendering industry is a by-product of the consolidation of the packing industry, changing eating habits, and new techniques in merchandising red meat. No one can change this trend and the rendering industry must follow along, trying to maneuver for survival. Renderers perform a vital service for society and there is no other reasonable alternative for the disposal of animal by-products. Unless they are allowed to merge and maintain cost-effective facilities, there is a possibility they will eventually have to be supported by the government i.e. (taxpayers) similar to commuter airlines servicing outlying regions.

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EXHIBIT I

DUPPS EQUACOOKER

93080/43

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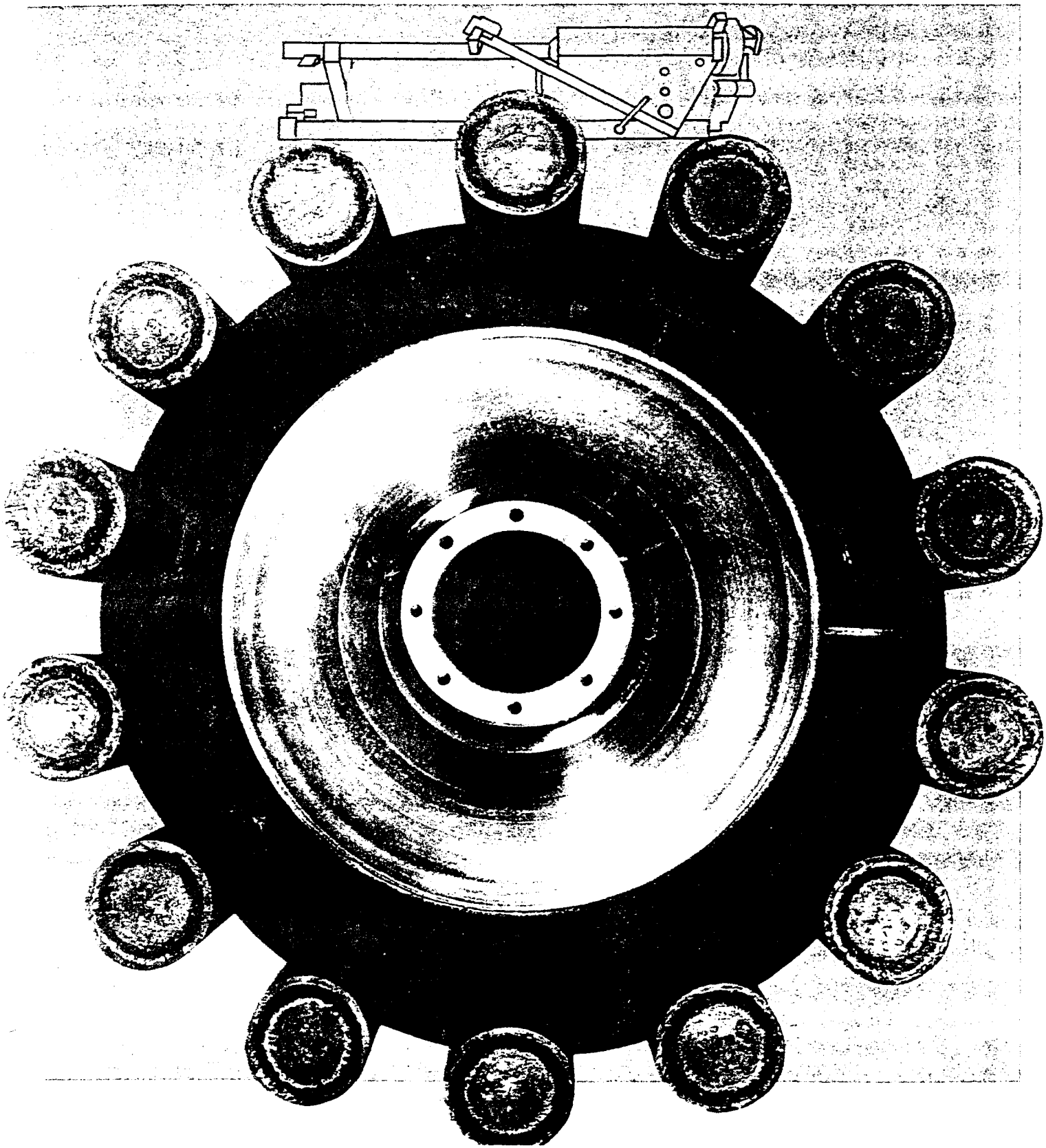
EXHIBIT No. I

DUPPS

EQUACOOKOR®



EQUACOOKOR® ... CONTINUOUS PROVEN PROFITABILITY

Proven Technology

The Dupps Continuous Rendering System replaced the batch method because it is more efficient ... and because it produces more consistent, more valuable tallow and meal.

The Dupps Equacookor is the heart of the Dupps System. It mixes raw materials while it heats them, thus producing a highly uniform product. End-point temperature and operating level are easy to control.

With its steam-jacketed shell and steam-heated shaft an Equacookor is still the most cost and energy efficient answer for continuous cooking applications that require up to 3,000 square feet of heat transfer surface.

Proven Performance

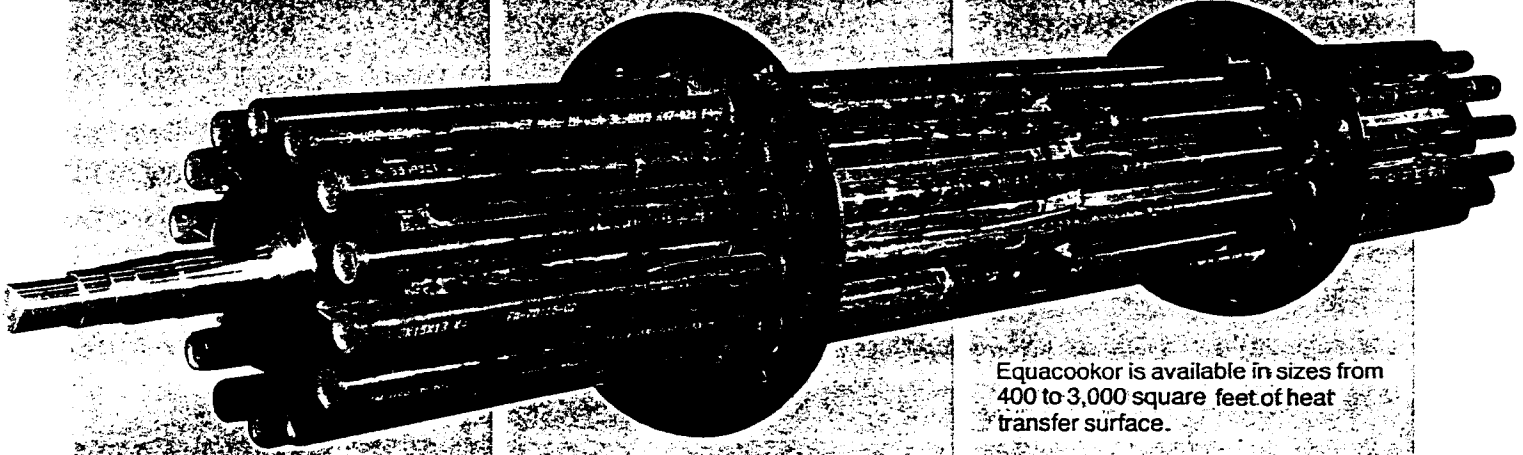
With over 300 operating installations, Equacookor is one of the most tried and job-proven pieces of rendering equipment. It is a known quantity, a sure investment in high productivity and high quality end-products. And of course, Dupps has the engineering and application experience it takes to make your installation successful.

Proven Durability

Like all Dupps equipment, an Equacookor is built to last and to keep maintenance costs down. It exceeds ASME Code thickness requirements to provide longer life.

In fact, many Equacookor customers have used the same shaft and vessel for over 12 years.

New Super Shaft packs more heat transfer surface in the same vessel. Available as a retrofit on existing Equacookor models.



Equacookor is available in sizes from 400 to 3,000 square feet of heat transfer surface.

DUKE CONTINUOUS RENDERING SYSTEMS

Start to finish, Dupps can do it.

Dupps originated the turnkey approach to rendering plant construction, and our experience is unmatched in the industry. That's experience across the entire spectrum of site selection, systems engineering, manufacturing, installation, building construction, start-up, and operator training. We hand you the key to an operating, reliable system.

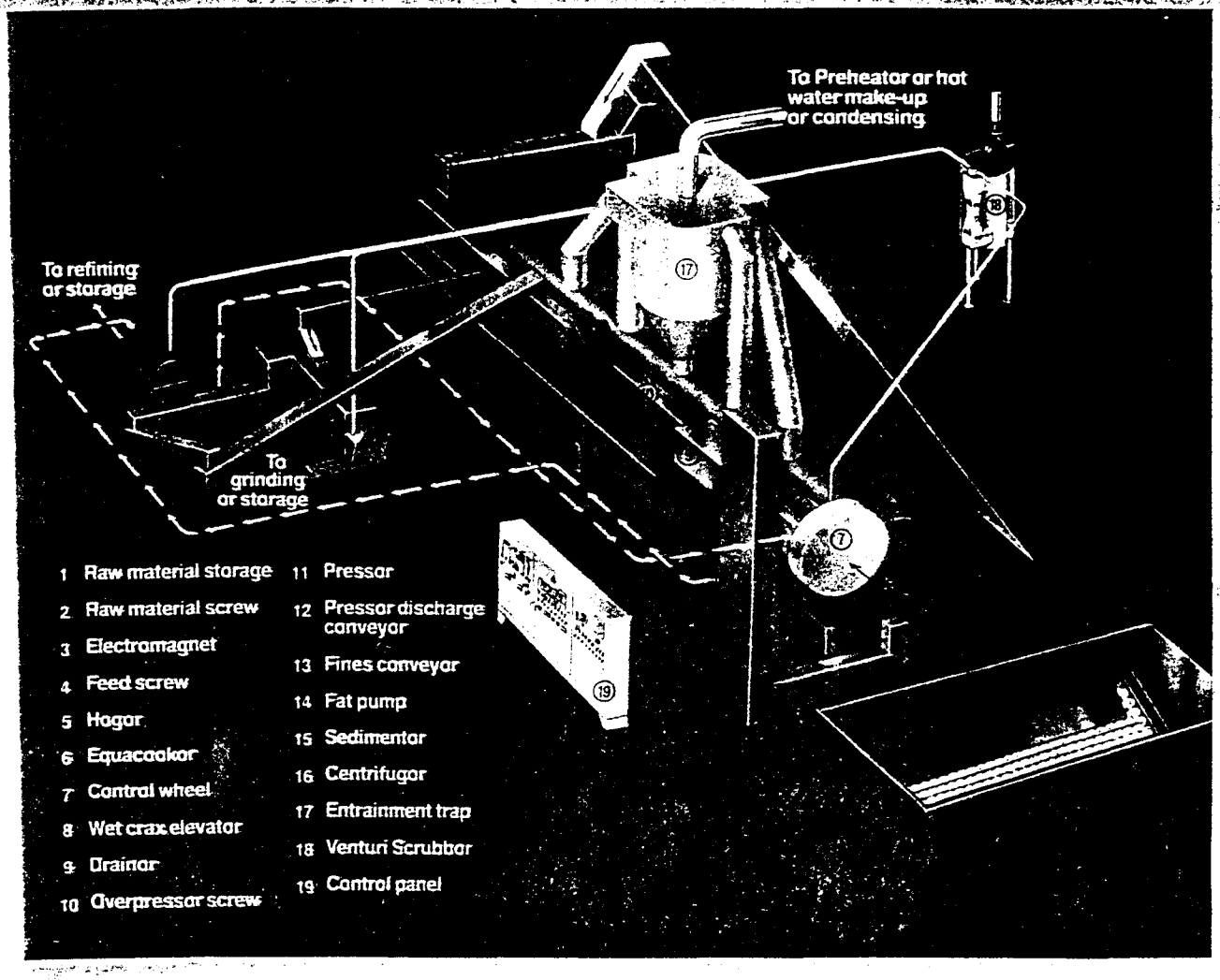
Simple approach, solid profits

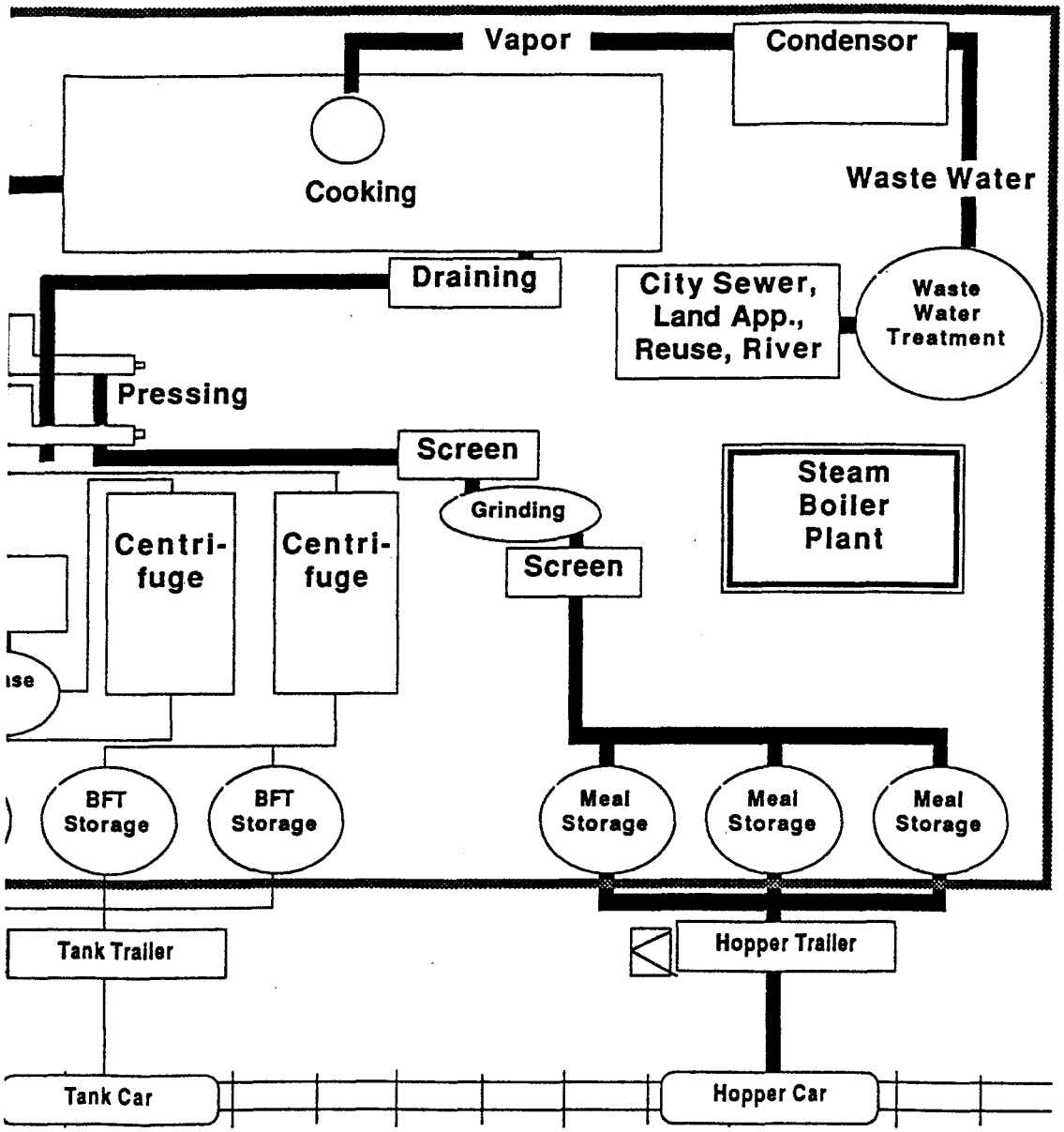
Look at the system diagram below.

Raw material moves from storage through the process to finished product storage with a minimum number of operations. So, you get consistent, top grade product at minimum cost. And Duke simplicity also makes it easy to collect process vapors for condensing, to make hot water, or to preheat raw material.

Ask our customers

Dupps has built turnkey continuous rendering plants for hundreds of satisfied customers. Call or write for specific references.




Vapor
Condensor
Cooking
Waste Water
Draining
City Sewer,
Land App.,
Reuse, River
Waste
Water
Treatment
Pressing
Screen
Steam
Boiler
Plant
Grinding
Screen
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Storage
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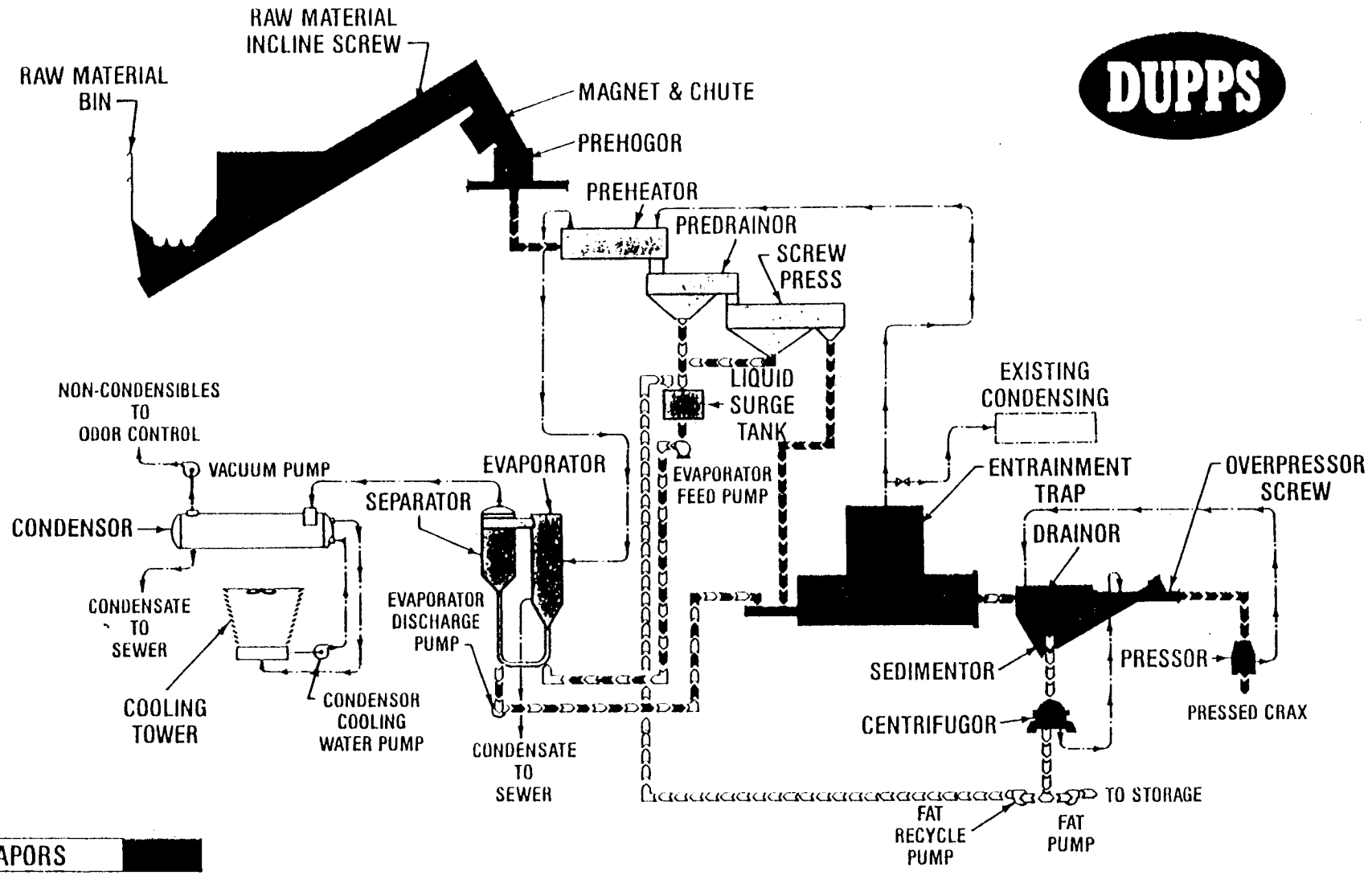
EXHIBIT II

DUPPS FLOW SHEET

93080/44



DUPPS

RETROFIT EVAPORATOR SYSTEM

The Dupps Company Germantown, OH 45327 513/855-6555 Bell Gardens, CA 90201 213/927-4471

Exhibit No. 11

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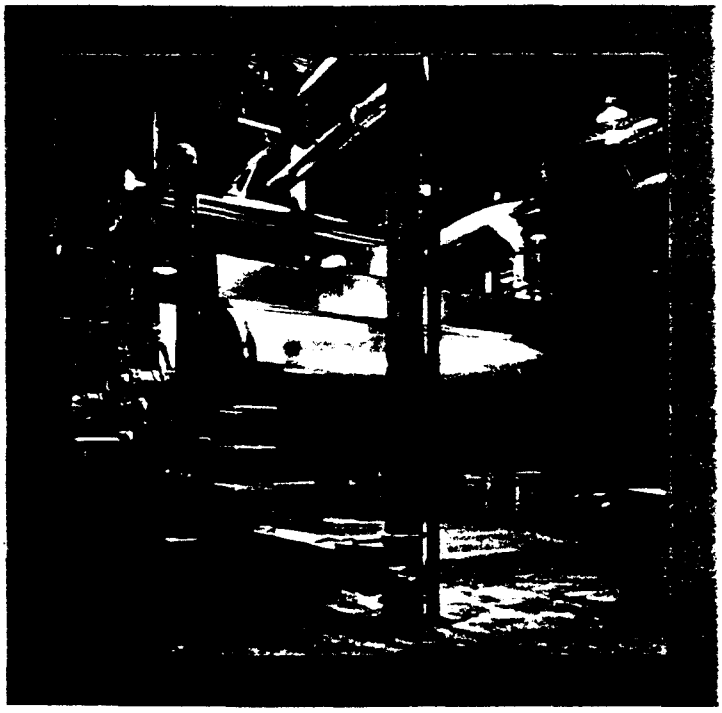
EXHIBIT III

STORD BARTZ SYSTEM

Stord Bartz Rendering Systems

For optimum product quality and reduced energy consumption



Stord Bartz is an independent engineering company specializing in systems design and equipment supply to the international processing industry. The company works primarily in the rendering industry, the fish meal industry, the sugar beet industry and the brewing, distilling and starch industries.

Covering the full range of services, from delivery of single components to supply of complete turn-key plants, Stord Bartz offers a more comprehensive programme to the rendering industry than any other single supplier.

Introduction of new technology and innovations has made Stord Bartz a pioneer and a trendsetter in technical development. Combined with a wide international experience, this makes Stord Bartz able to provide the best solutions to the benefit of the rendering industry.

Stord Bartz' head office is in Bergen, Norway. Most markets are served through subsidiaries or agents.

CONFIDENTIAL

Stord Bartz Rend

High product quality

Improve product quality by using Stord Bartz innovative systems and components.
Use the Rotadisc drier for gentle handling of the products to ensure efficient fat separation and a first class meal of consistent quality.
Use the Stord Bartz Feathrolizer® to give reduced heat exposure and increased nutritional value of the feathermeal.
For optimum fat quality, use the SBDR continuous rendering system for early-stage separation of fat.

Low energy consumption

Depending on the solutions chosen in each individual case, Stord Bartz continuous rendering systems may reduce energy consumption by up to as much as 60% compared with conventional batch systems.
Up to 50% energy can be saved by using the Feathrolizer for continuous hydrolization of feathers.

Easy to operate

Machines and systems are designed for easy operation and require a minimum of attendance during operation. Equipment is also available for automatic control, including all steps from single control of temperatures and levels up to fully integrated systems for continuous rendering.
Hydrolization of feathers can be remote controlled, requiring a minimum of manning.

Easy to maintain

Plant and components are designed for easy access, providing minimum down-time periods.

Large capacity

Plant throughput can be increased by up to 70% by adding a Stord Bartz waste heat dewatering system. The Stord Bartz continuous Feathrolizer handles up to 15 tons of raw feathers per hour. Up to 30 tons of raw material per hour can be handled in a single cooker/drier unit.

High reliability

Robust design based on years of operating experience, slow-moving machine elements and an extensive use of stainless steel and wear-resistant alloys, give minimum maintenance and long lifetime of machinery.

Excellent environmental impact

Stord Bartz equipment is designed to meet the demands for compact, space-saving and easily-installed components. Environmental protection equipment is designed to meet the latest requirements and includes odour removal and effluent treatment.

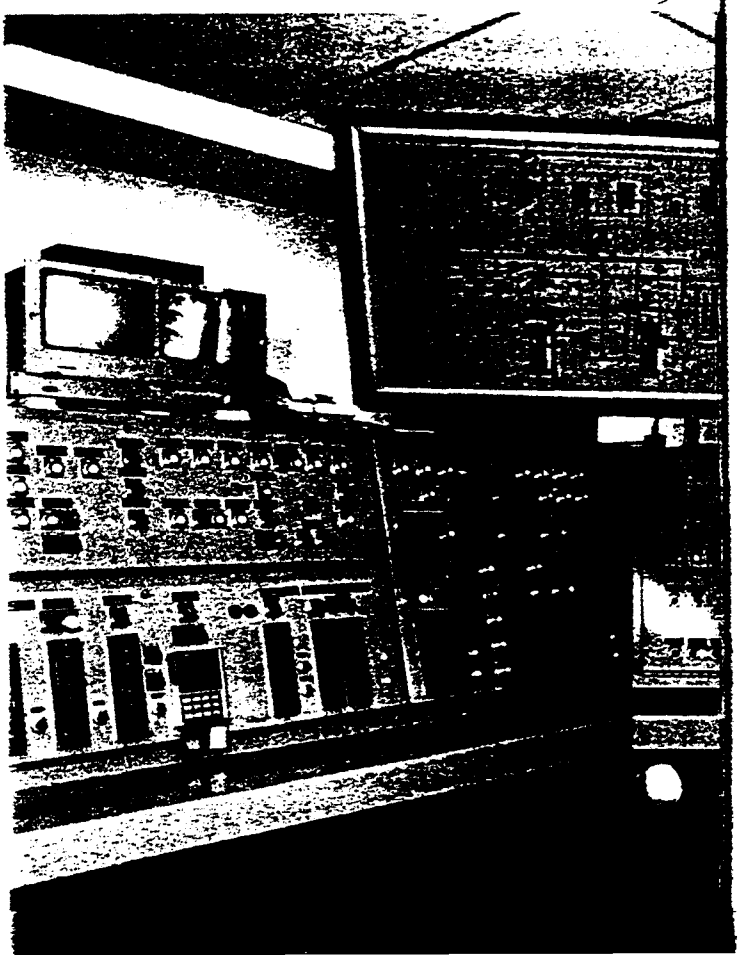
Latest technology

Years of practical experience, combined with comprehensive engineering resources and expertise in dewatering and solids/liquid separation techniques, provide Stord Bartz with a clear objective towards improving rendering technology. This quality has made Stord Bartz the pioneer in the technical development of the rendering industry.

Complete programme:

Stord Bartz experience covers all types of rendering, and equipment and service are offered for:

- Meat and bone rendering
- Feather processing
- Blood-meal production
- Fat melting



ering Systems

OUR FULL RANGE OF SERVICES

With a staff of 150, of which 90 are engineers and technicians, Stord Bartz provides the following support:

Consultancy

Assistance from specialists is available for identifying and analyzing your requirements. Right from the initial planning phase to feasibility and economic studies, Stord Bartz is ready to select, design and engineer equipment and systems to provide the optimum combination of economy, efficiency and reliability.

Engineering

Complete system designs and detailed engineering ·pport are supplied to find the optimum solution for ·h individual project.

Turn-key projects

We have the total capability for designing, projecting and supplying complete plants worldwide. Expertise which has been gained from fifty years involvement n a wide range of projects is at your disposal.

Start-up and commissioning

Skilled technicians are on hand for the installation and follow-up of the supply right from the first stage.

Training

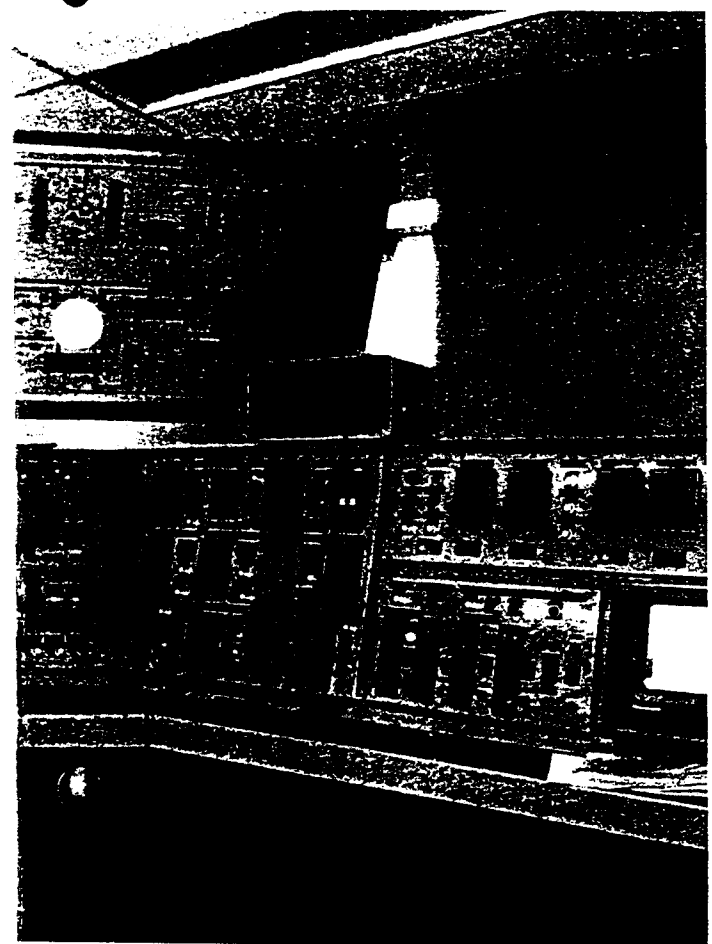
Comprehensive programmes are provided for your operators to ensure safe and efficient operation of the plant.

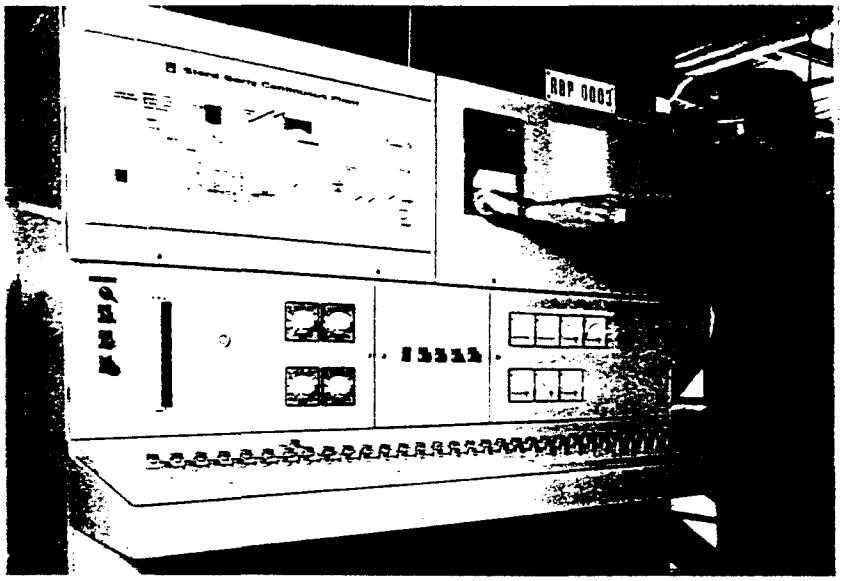
Field service

The extensive range is available worldwide, providing assistance and support in troubleshooting, plant optimalization, service and maintenance, rapid supply of spare parts. Speed and efficiency are the principles here, to minimize plant down-time.

Research and development

Pilot plants and laboratory facilities enable a wide range of testing to find the best solutions. Test equipment can, in some cases, be provided at your plant to prove the feasibility before deciding on the final components and systems.





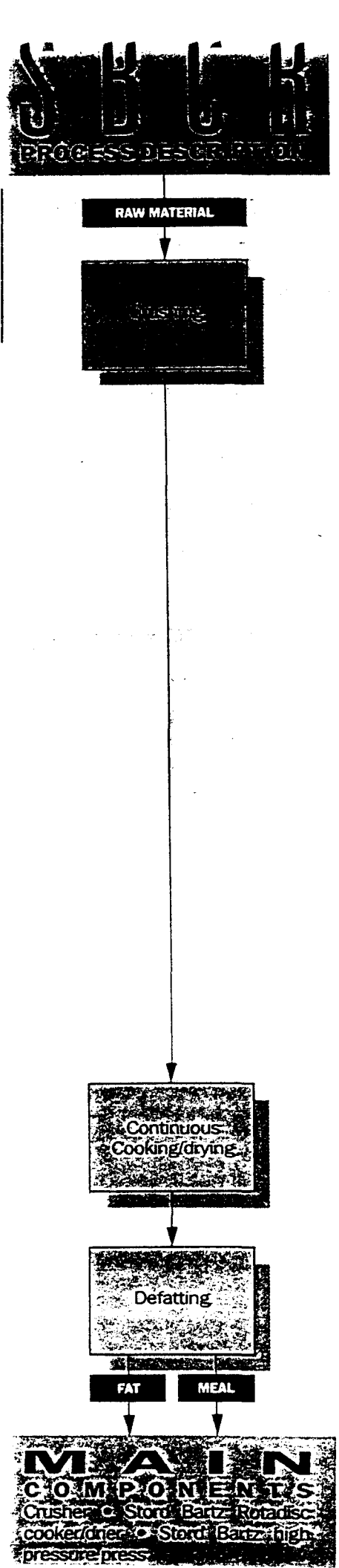
The Stord Bartz Continuous Rendering System

Compact and economical, a reliable and flexible system for continuous rendering

- The SBCR is the result of years of experience in rendering. It handles all types of raw material, is very flexible, and can be combined with any type of system in use. Compared with a conventional batch process, the SBCR system can reduce fuel demand by up to 30%. Capacities of up to 30 tons per hour in one cooker/drier unit are available.
- The heart of the SBCR system is the Rotadisc continuous cooker/drier, which makes the system highly versatile, simple and easy to operate.
- The combination of a prebreaker, a Rotadisc drier and a high pressure fat press is the most popular rendering system in use today.

Special features of the SBCR:

- Simple to operate
- Handles sticky as well as other difficult-to-dry materials
- Low maintenance costs
- Reduced power consumption
- Reduced personnel costs
- No recirculation of fat and liquid required
- Gentle cooking and drying
- Materials of construction to suit various requirements



The Stord Bartz Waste Heat Dewatering System®

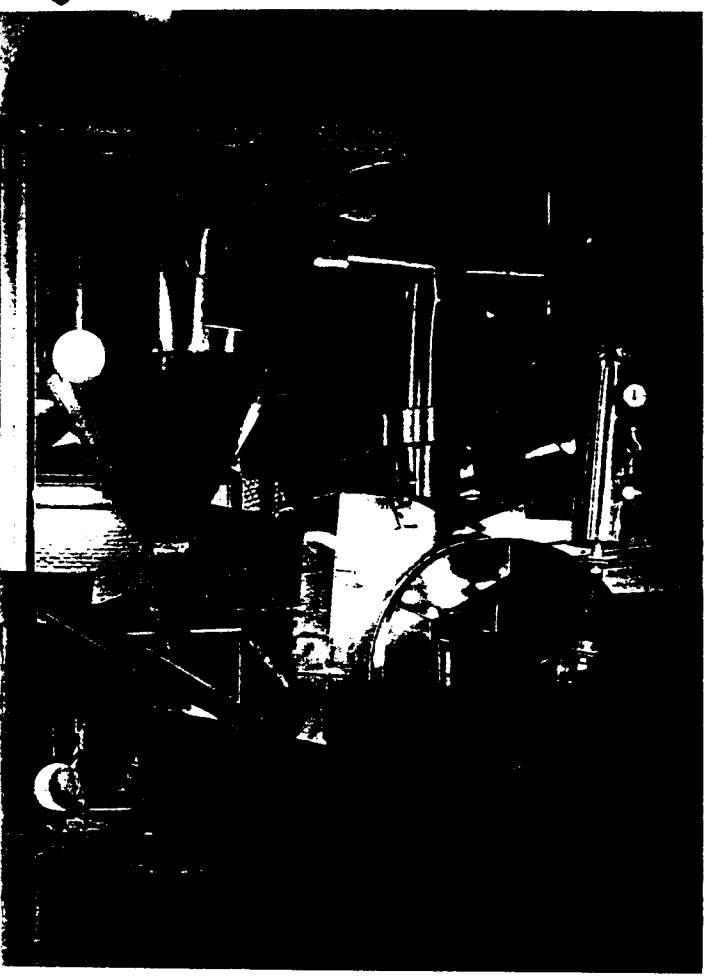
For increased capacity and reduced energy consumption

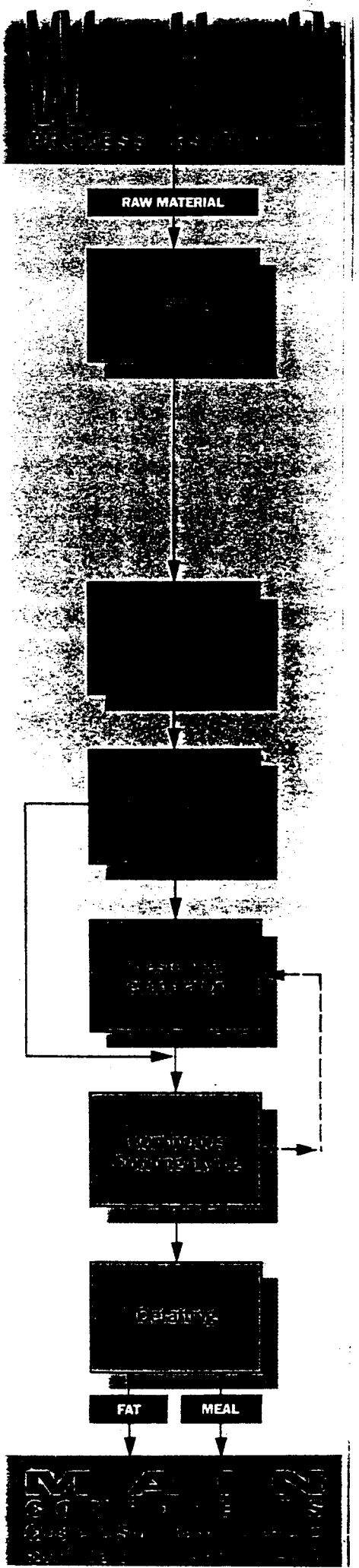
The patented WHD system provides an optimum combination of mechanical and thermal dewatering by using waste heat energy. Most rendering systems can easily be converted to the WHD system.

The key component is the Stord twin screw press. This splits preheated raw material into a solids phase and a liquid phase containing mainly water and fat. Most of the water in the liquid phase is then removed by a waste heat evaporator, utilizing the energy content of the exhaust vapour from the cooker/drier. No live steam is required for this concentration.

The system gives the following major advantages:

- 50-60% reduction in steam/fuel demand compared with conventional batch systems
- Up to 70% capacity increase of existing continuous cooker/drier installation in tons raw material per hour.
- Reduction in electric power consumption per unit throughput
- Self-balancing of vapour from cooker/drier with variations in raw material

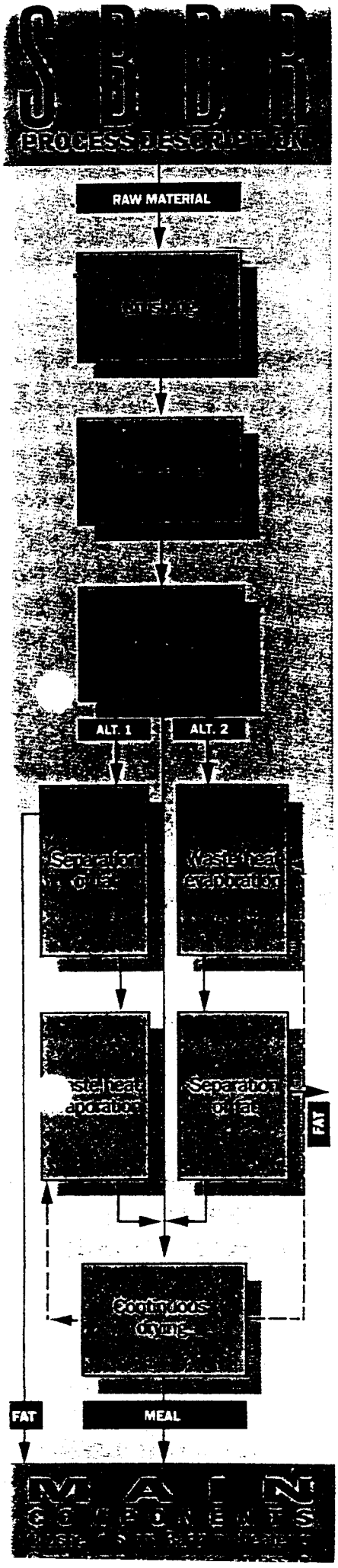


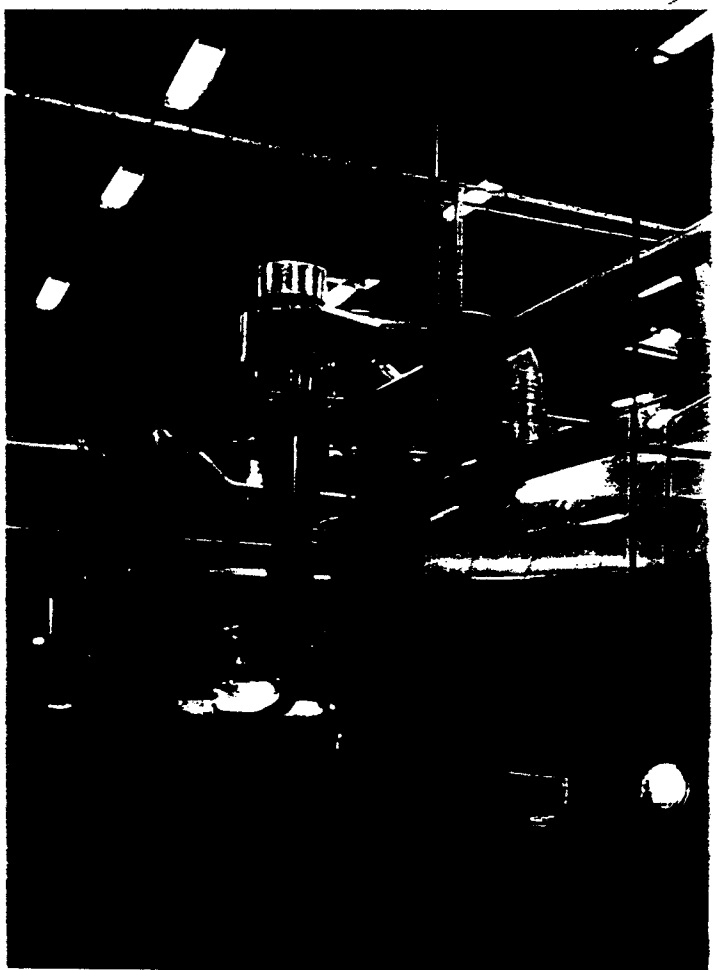


The Stord Bartz Dewatering Rendering System®

A cost-reducing plant for early-stage separation of fat and gentle drying of meal

- This patented system is a further development of the WHD system and involves the separation of fat from the meal before it is dried. This results in a higher fat quality and a more gentle drying of the meal, giving an improved meal quality.
- When the preheated raw material has been split into a solids phase and a liquid phase by the Stord twin screw press, the fat is separated from the liquid directly. This separation of fat can be done before or after the concentration of the liquid in the waste heat evaporator. No high pressure fat presses are therefore required for this system.
- Energy consumption corresponds to that of the WHD system; however, as high pressure fat presses are not required in the SBDR system, electric power consumption and maintenance costs are reduced.
- The waste heat evaporator can be delivered as one, two, or three-stage units.





The Stord Bartz Continuous Rendering System For Feathers

Robust and simple, using a unique method of hydrolization

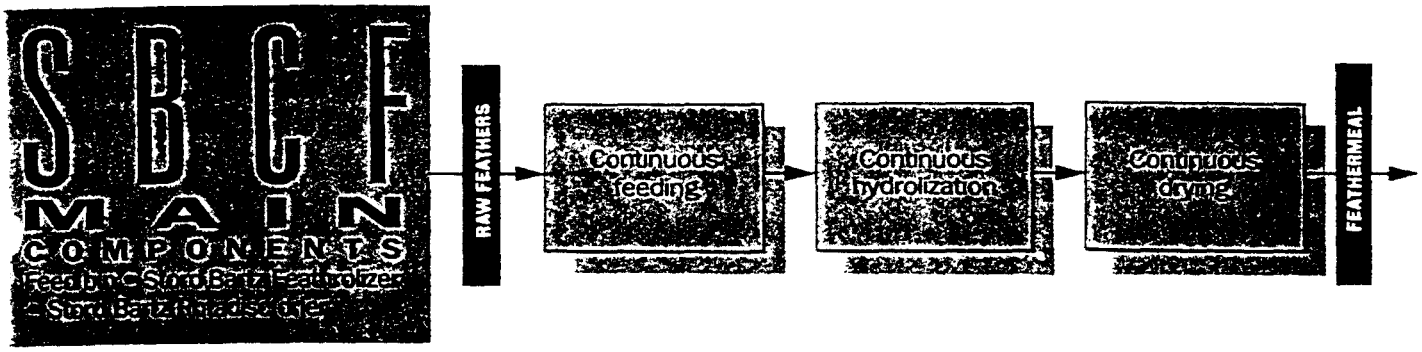
The SBCF system makes use of the patented Feathrolizer, an innovation that brings the rendering of feathers up to the same high level of technology as the latest meat and bone meal rendering processes.

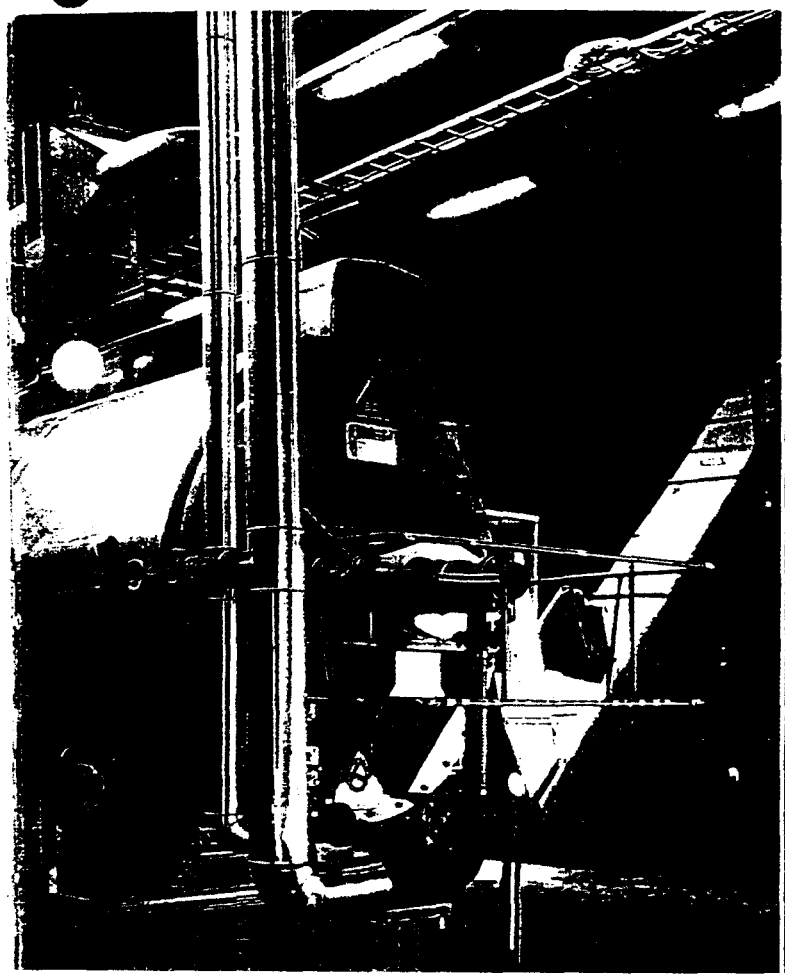
The raw feathers are fed continuously into the Feathrolizer from a feed bin. The residence time in the Feathrolizer which is very short and can be adjusted, gives reduced heat exposure and therefore a high nutritional value of the meal. The process is entirely continuous.

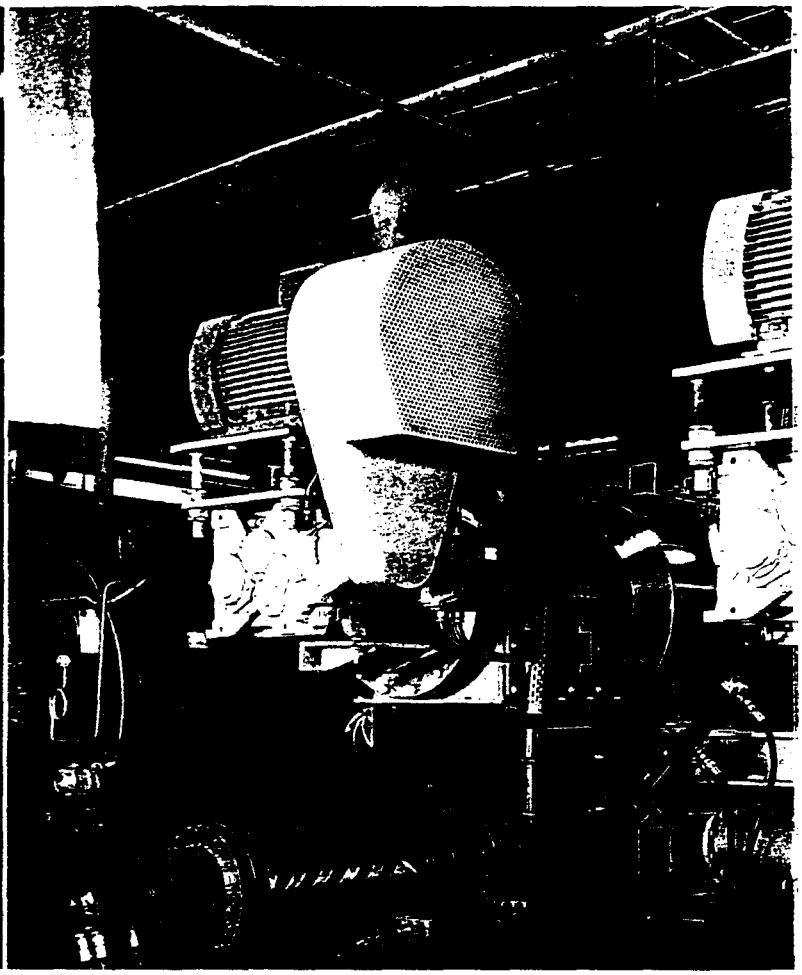
The final step of the SBCF system, making feathers into feathermeal, is the Rotadisc drier. A fully continuous process is thus available, able to handle all types of poultry and turkey feathers.

Advantages over existing batch techniques

- Fully continuous system
- Reduced manpower
- Consistent and improved meal quality
- Up to 30% reduction in steam consumption
- Reduced residence time for hydrolization, giving better nutritional value of the meal
- Reduction in electric power consumption
- Less space requirements
- Higher degree of automation







The Stord Bartz Dewatering System For Feathers

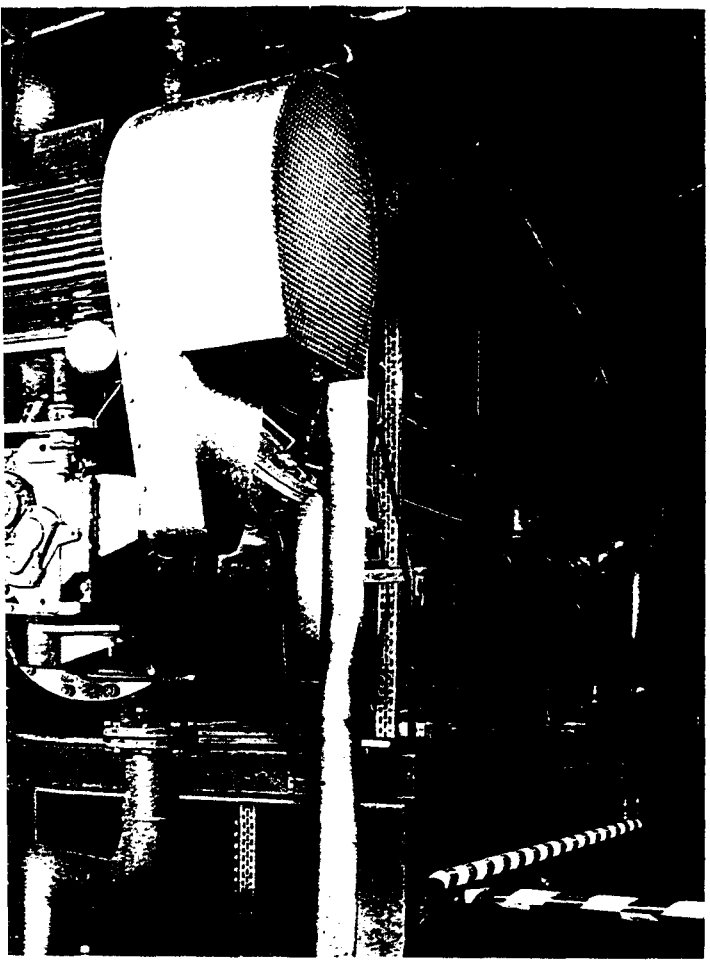
For producing high quality feathermeal with less energy

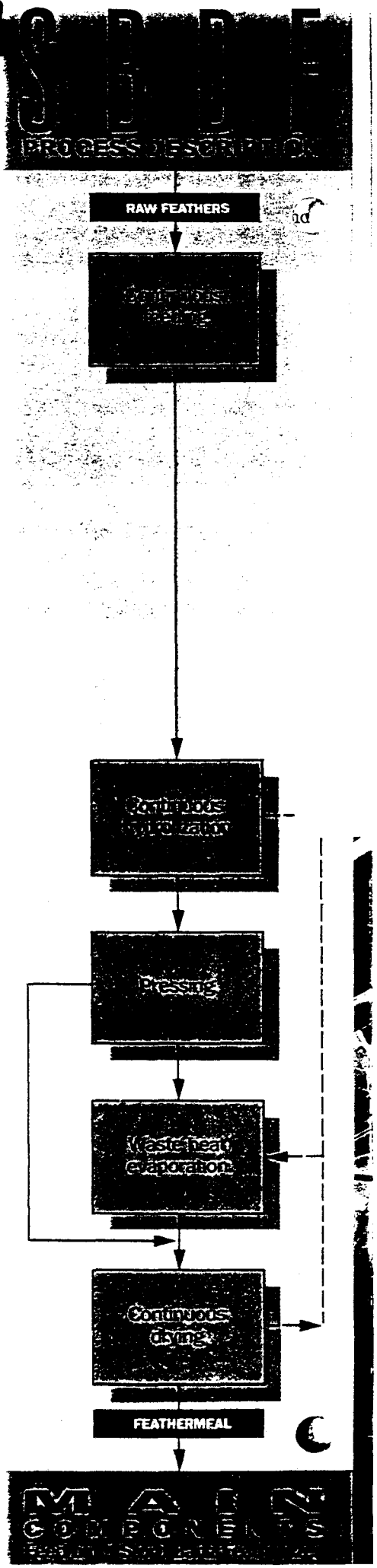
The system is designed for continuous operation and provides the optimum combination of reliability, economy and product quality. Capacities of up to 15 tons per hour of raw material are available in a single line.

The SBDF system splits the hydrolized feathers into a solids phase and a liquid phase by use of the Stord twin screw press. The liquid phase is concentrated in a waste heat evaporator using the exhaust vapour from the drier as a heating medium, giving increased system throughput and reduced energy consumption.

Advantages

- Continuous production line
- 50% less energy than a comparable batch operation
- Easy maintenance and long lasting equipment
- Fully closed vapour system





Stord Bartz Blood Processing Plants

For continuous drying of blood

Blood is a valuable raw material, but difficult to handle. It is often processed in plants designed for other purposes, which frequently results in poor product quality.

With the Rotadisc drier, Stord Bartz provides a cost-effective method for the production of blood meal. The indirectly heated Rotadisc drier gives a continuous drying process, specially designed to handle difficult and sticky materials.

Advantages

- Improved heat economy
- Simple operation and low maintenance costs
- Compact design
- Excellent product quality
- Good environmental impact

The Rotadisc can be used successfully with most blood processing systems, such as:

With sterilization:

The use of a Rotadisc drier for drying of blood after sterilization in a batch cooker will eliminate the problem of seizing and coating in the cooker. It also gives the advantages of a continuous process, economical drying and improved product quality.

With decanter centrifuge:

The Rotadisc drier is excellent for the drying of coagulated blood from decanters.

For direct drying of raw blood:

Raw blood can also be fed directly to the Rotadisc drier, where the blood will be coagulated and dried in a single continuous operation producing a good quality dried product.

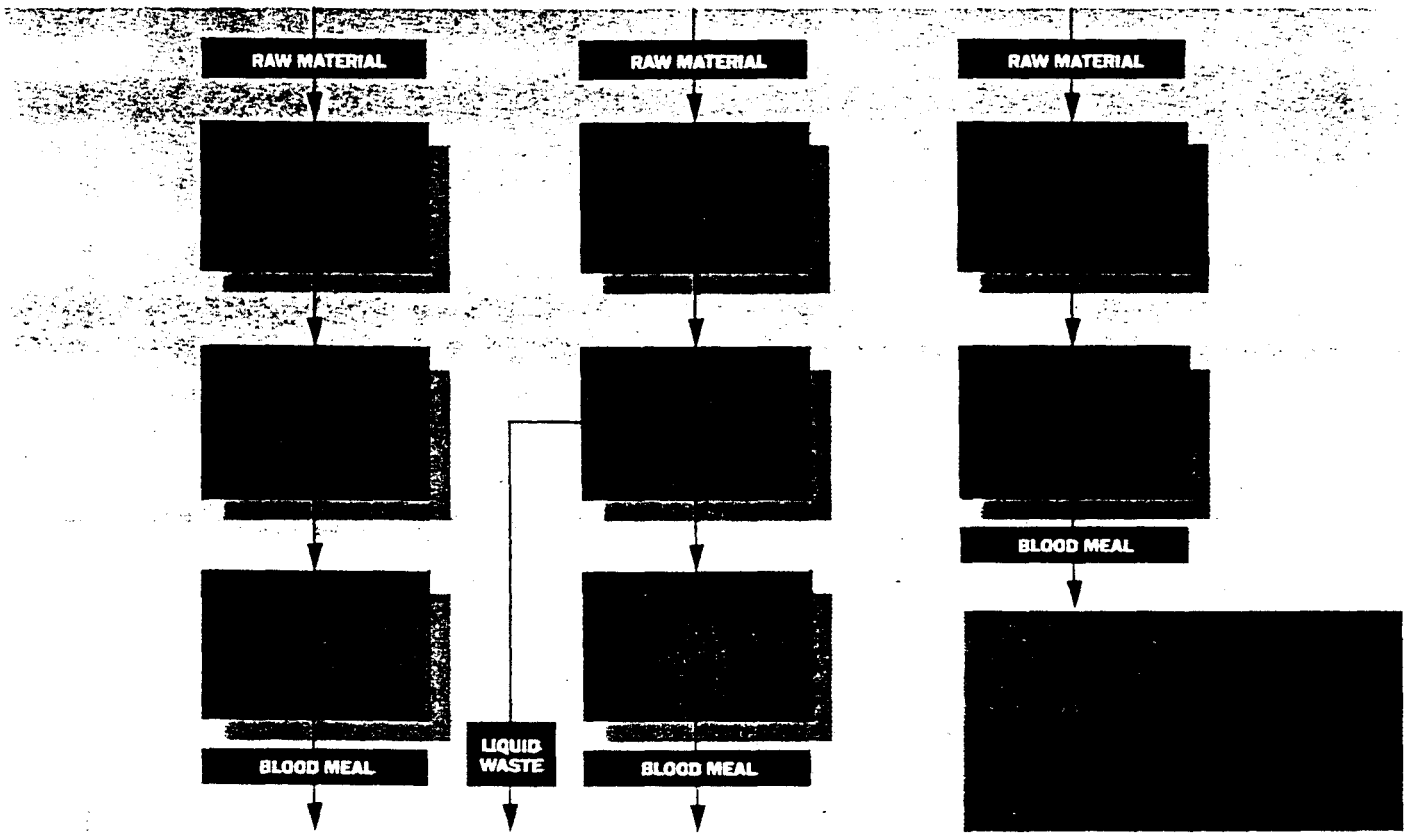


EXHIBIT IV

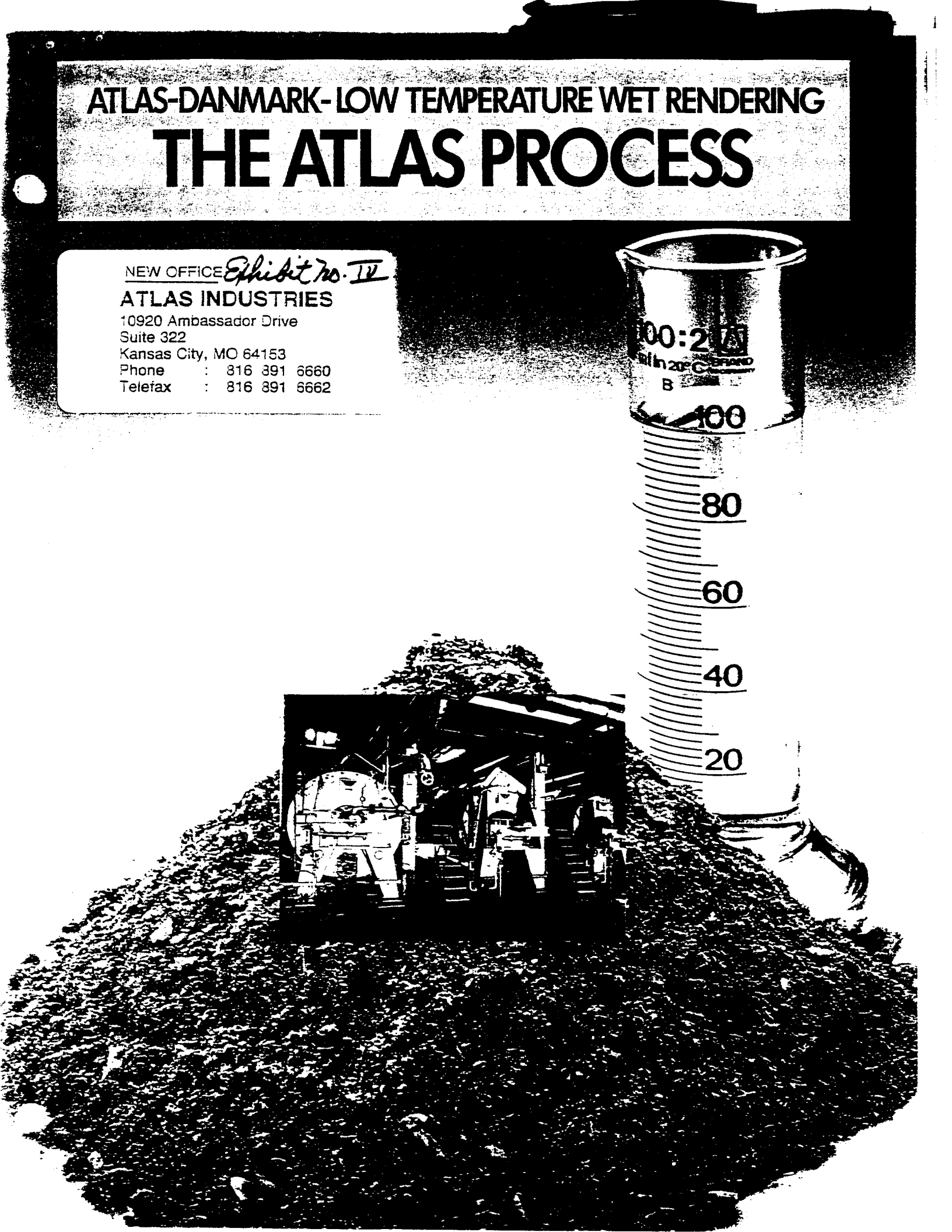
THE ATLAS PROCESS

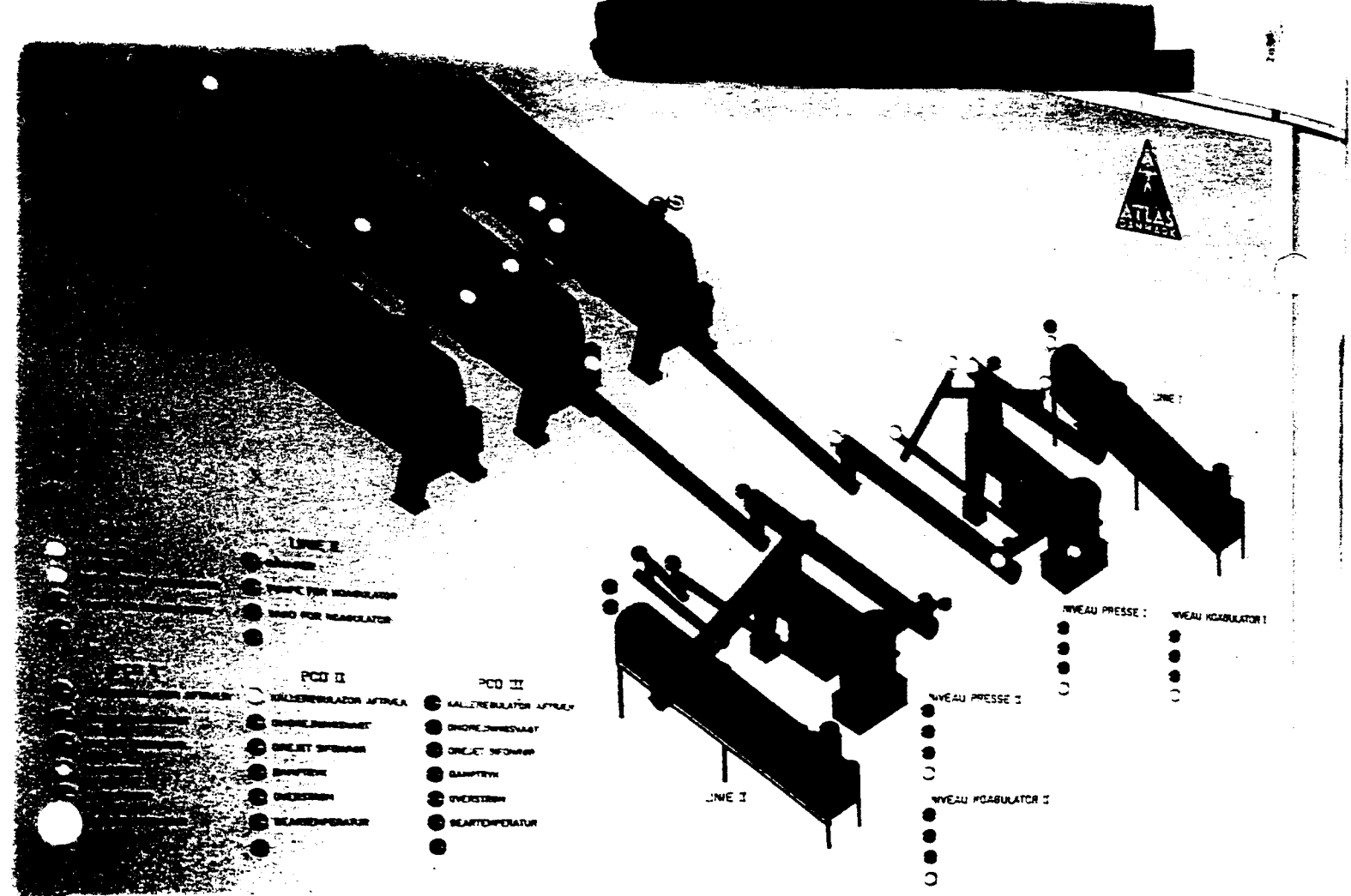
ATLAS-DANMARK-LOW TEMPERATURE WET RENDERING

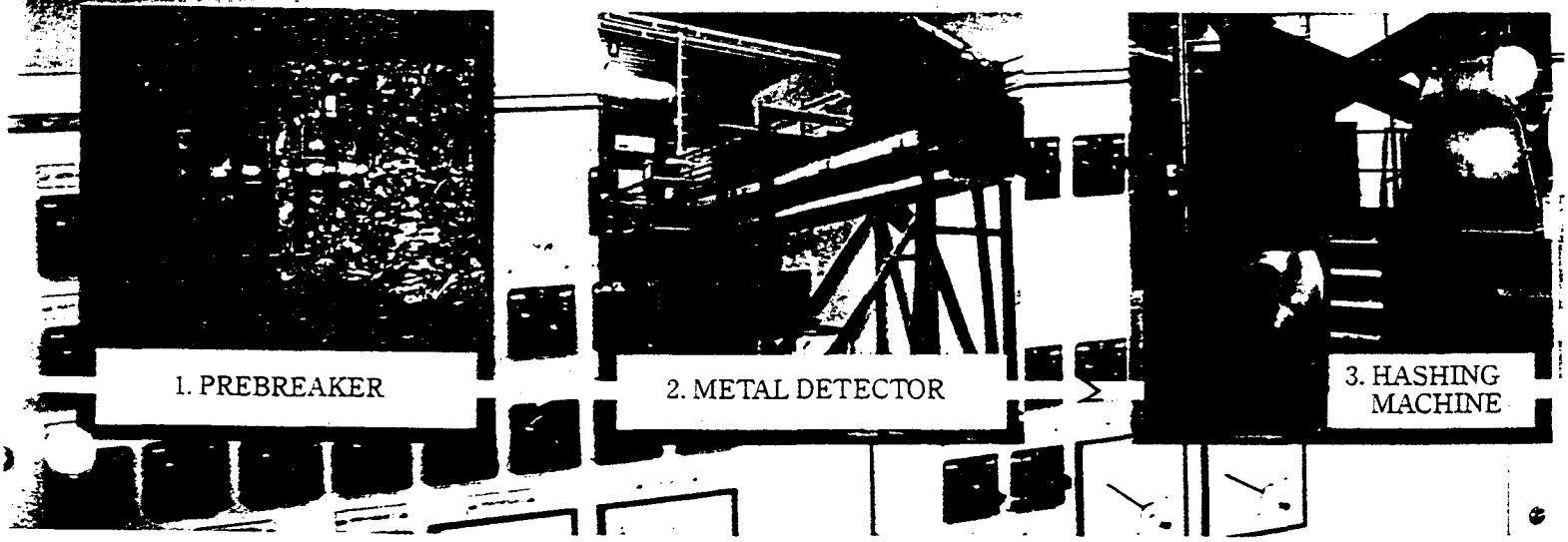
THE ATLAS PROCESS

NEW OFFICE Exhibit No. IV

ATLAS INDUSTRIES
10920 Ambassador Drive
Suite 322
Kansas City, MO 64153
Phone : 816 891 6660
Telefax : 816 891 6662







1. PREBREAKER

2. METAL DETECTOR

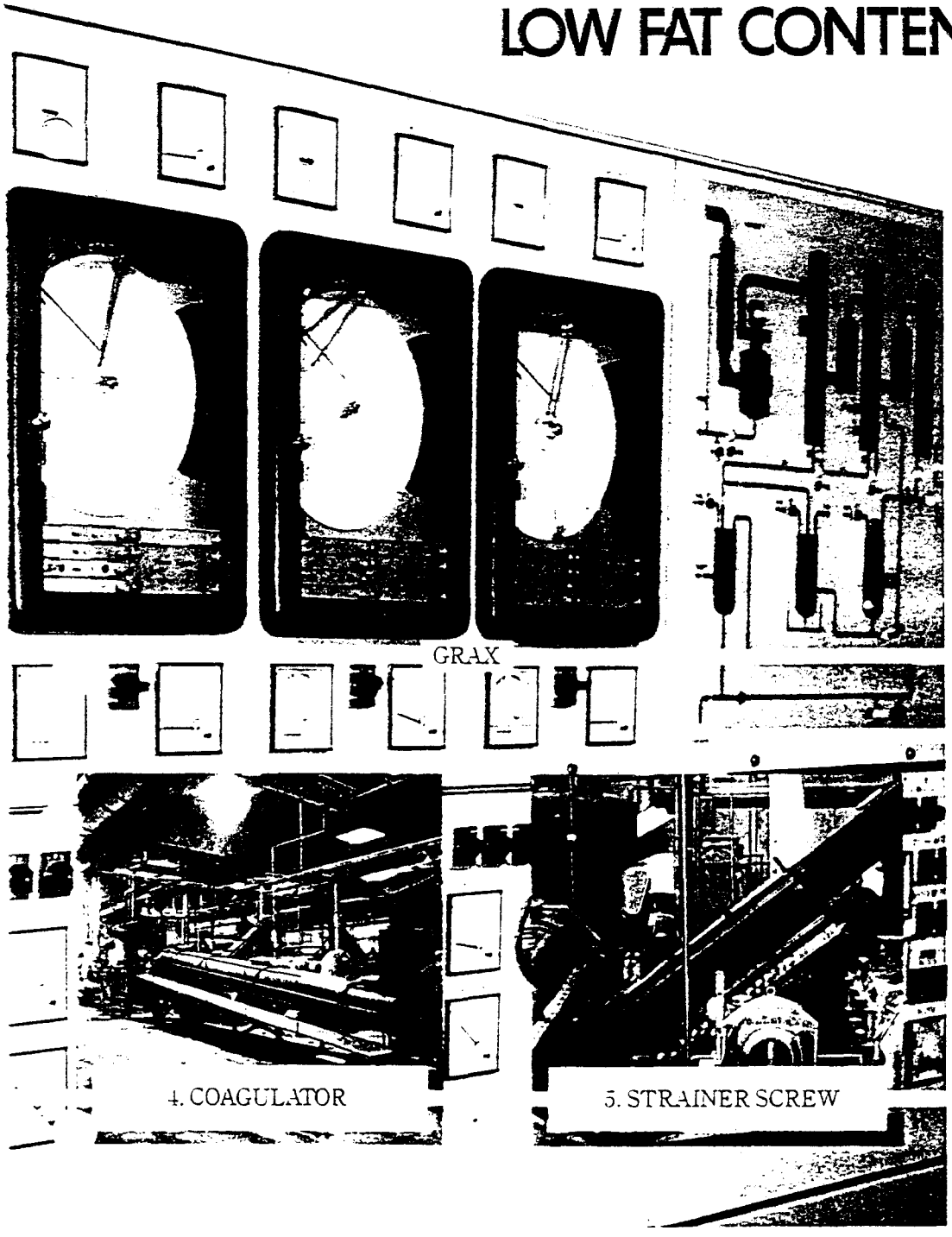
3. HASHING MACHINE

The Atlas Process treats all types of raw material, normally received at a rendering plant, i.e. bones, soft material, and fallen stock.
The first step in the continuous process is prebreaking.
The prebreaker is of a very robust and durable design running at low speed.

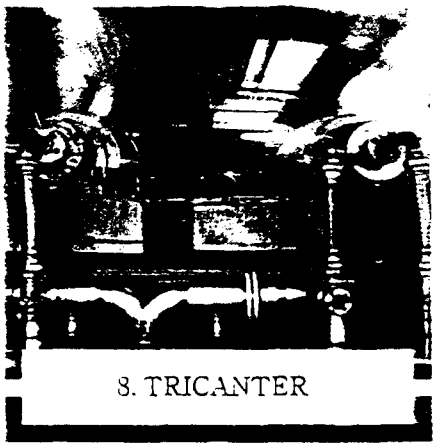
After the prebreaking the raw material is dosed continuously to a conveyor belt, where a magnet and a metal detector automatically sort out iron and non-magnetic metals.

The efficient and very robust high-capacity hashing machine handles the next step in the Atlas Process with very low maintenance costs.
The raw material is hashed to a particle size, ideal for the low temperature coagulation and subsequent continuous sterilization.

THE ATLAS PROCESS COMBINES LOW ENERGY C
LOW FAT CONTENT OF MEAL WIT



GRAX



8. TRICANTER

4. COAGULATOR

5. STRAINER SCREW

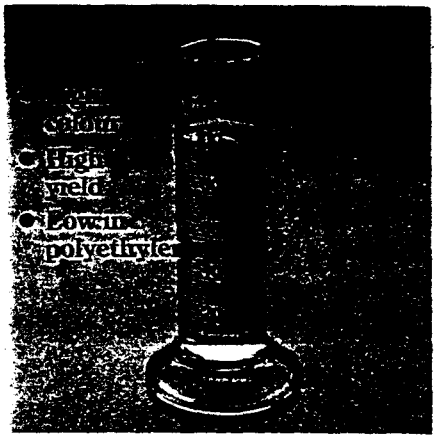
6. DOUBLE SCREW PRESS

The coagulator consists of a double heating screw, specifically developed for the utilization of waste heat for indirect heating and coagulation of meaty raw material.
The double screws give a steady, continuous, and adjustable flow. Good mixing through the whole length ensures that all parts reach the same temperature of 55-60°C (131-140°F).
In combination with a short retention time in the coagulator, this low temperature dissolves the minimum amount of glue and provides an ideal structure for the subsequent separation processes.

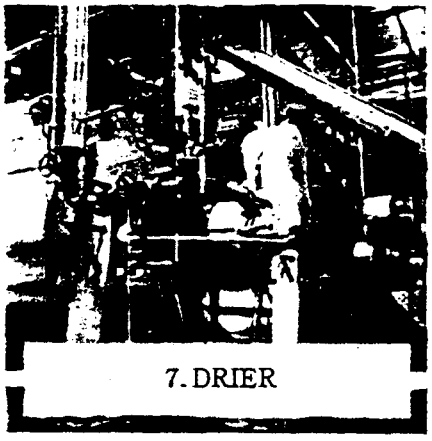
Draining of free liquid gives a uniform material entering the press. In this way the optimum separation of fat and water is achieved.
The strainer screw has adjustable holes allowing very soft material to fall through the screen and be pumped to the three-phase decanter.

A standard type, slow running double screw press is modified (patent pending) to ensure a constant optimum pressing and separation of solids from the water and fat.
The press cake, holding 5-8% fat in dry matter, is led directly to the Atlas PCD-drier.
The liquid is pumped to the three-phase decanter. Plastics are retained in the press cake.
Practice has shown low wear on the press.

ERGY CONSUMPTION AND AL WITH HIGH RELIABILITY



8. Liquid from the press and strainer screw is heated by live steam injection and pumped to the tricanter.
Short contact time between fat and proteins results in light-coloured fat.
As nearly all solids, including plastics, are retained in the press cake, the wear on the tricanter and the polyethylene content of the fat are low.
The low temperature process makes it possible to separate the fat and produce a glue water with low fat content, using only the tricanter.



The Atlas WHE is a falling film evaporator, powered only by the vapours from the drier. Power consumption is low, and excellent heat transmission is obtained due to the low fat content of the glue water.
The number of stages can be 1, 2 or even 3, depending on the type of raw material to be processed.
The efficient utilization of the waste heat makes it possible to add waste water high in BOD to the process, helping to solve pollution problems.
Concentrated glue water is dried together with the press cake.

d type, slow run-
ile screw press is
patent pending) to
onstant optimum
of solids from the

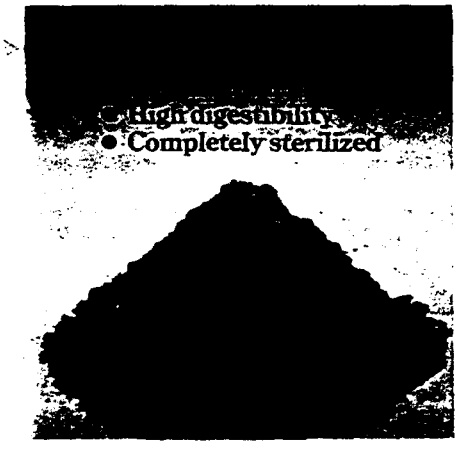
5-8% fat in dry
the Atlas PCD-

the three-phase
tained in the press

wear on the press.

7. The patented Plate Contact Drier has stainless steel heating plates and housing allowing the drier to be operated almost hermetically. This means:

- Low content of non-condensable gases in vapours,
- High temperature vapours giving efficient waste heat recovery in process (90-95%),
- Temperatures ensuring complete sterilization of meal,
- Easy regulation of moisture in dried meal (2-10%),
- Self-cleaning operation ensured by the patented stainless steel heating surface and giving constantly high evapo-

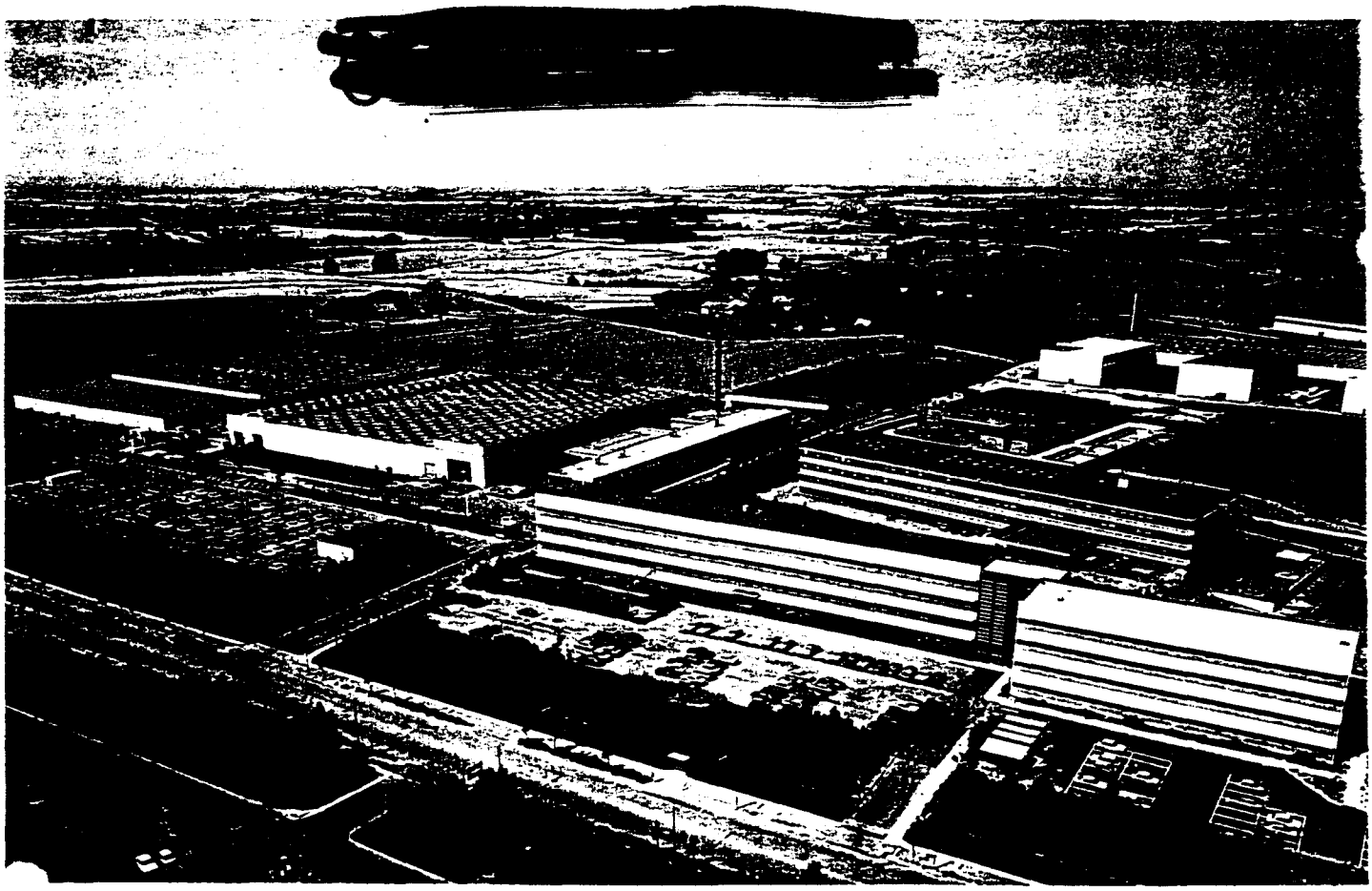


THE ATLAS LOW TEMPERATURE WET RENDERING PROCESS

The Atlas Process is the result of intensive basic research followed by long-time testing in pilot plant and full-scale practical production. New and highly reliable machines, specially designed to give optimum processing conditions, have been developed.

The Atlas Process offers renderers considerable advantages as compared with other processes:

- Low energy consumption, 25-35 kg oil (7-10 US gal) per metric ton raw material,
- Process not sensitive to fluctuations in raw material composition,
- High reliability and low maintenance costs proved in full-scale production in several plants,
- Low fat content of meal (5-8%) without the use of solvents,
- Compared with traditional dry rendering methods, the total yield of meal and fat is increased by 2-3%, without lowering the protein content of the meal,
- Improved fat quality with respect to colour and free fatty acids. The fat also has a low content of polyethylene,
- Low processing temperature giving trouble-free drying, even with raw materials high in glue,
- Enclosed system with low amount of non-condensable gases, permitting efficient deodorization,
- Possibility of upgrading products, including the production of wet feed, bone meal, dried glue water, etc.
- Continuous sterilization.



Atlas, founded in 1899, with its head office and main factory located a few miles northwest of Denmark's capital, Copenhagen, is an engineering, manufacturing, and contracting company with versatile activities in the feedstuff, food, and marine equipment industries.

For more than 40 years Atlas has supplied equipment for the rendering industry. Equipment or complete plants have been delivered to more than 50 countries.

In addition to processing plants for the meat, poultry, and fishery industries, Atlas designs and manufactures freeze-drying and industrial drying plants and marine equipment.

Atlas itself is part of the Lauritzen Group, which with more than 15,700 employees is one of Denmark's largest enterprises with extensive activities within shipping, shipbuilding, industry, offshore, and energy exploration.

ATLAS DANMARK

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CABLES: ATLAS. COPENHAGEN

ATLAS DANMARK

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ATLAS DANMARK

FLOW DIAGRAM ATLAS PROCESS

LOW TEMPERATURE WET RENDERING PROCESS.

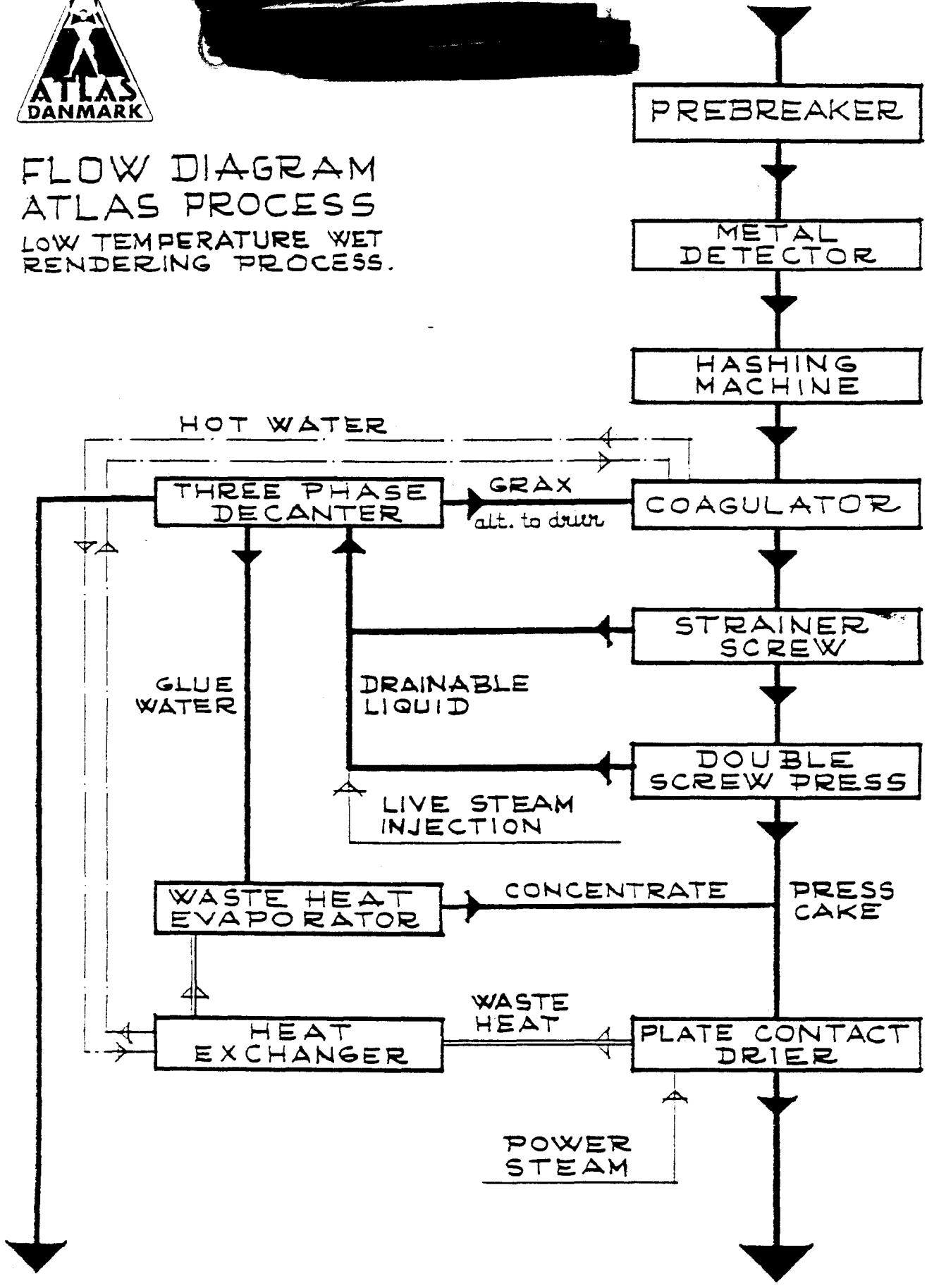

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EXHIBIT V

ANDERSON C-G FLOW SHEET

9308D/47

ANDERSON C-G

CONTINUOUS INEDIBLE RENDERING PROCESS

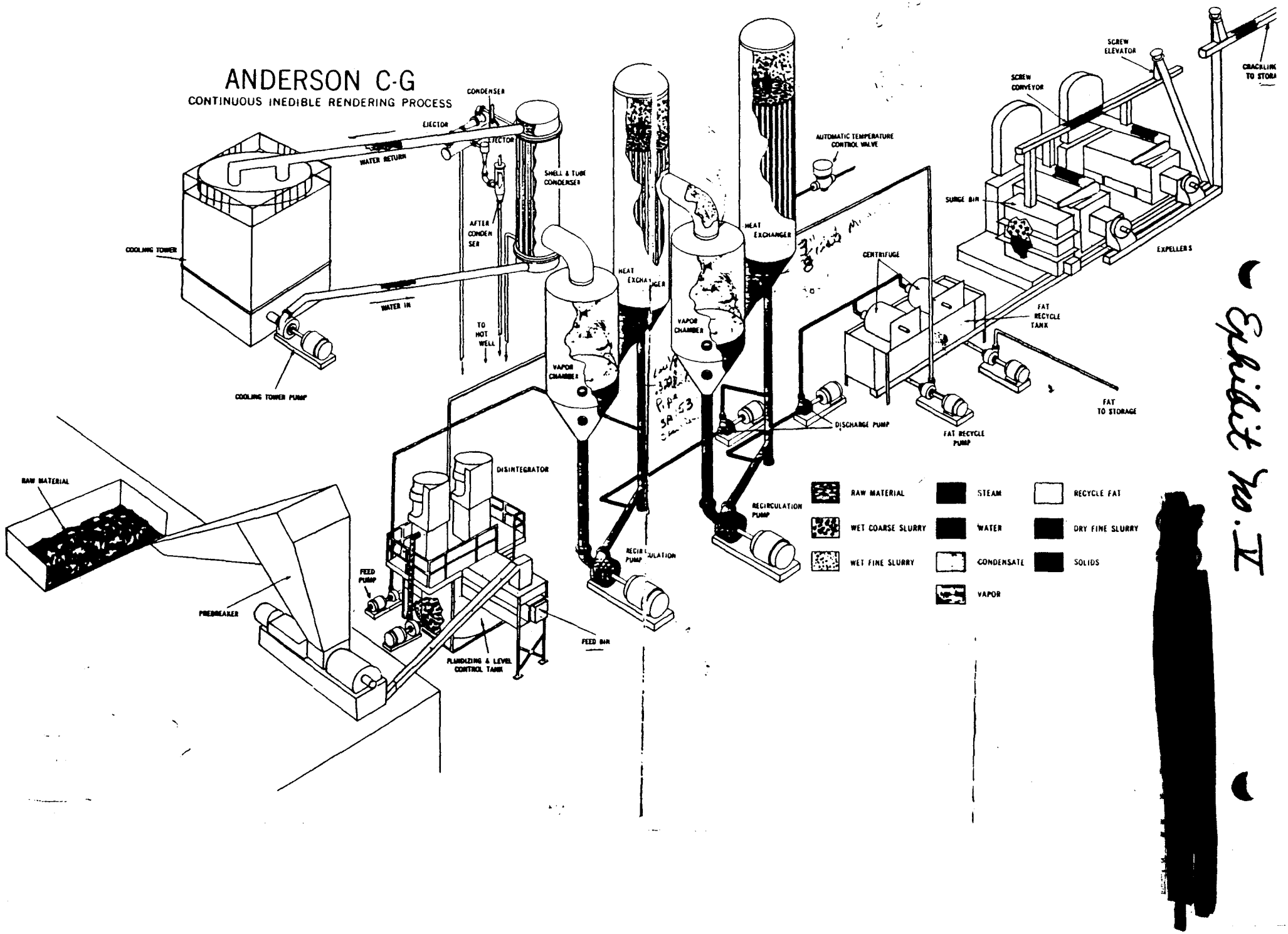

Exhibit No. I

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EXHIBIT VI

TRENDS IN RAW MATERIAL SUPPLY CHAIN PROFILE

93080/48

EXHIBIT No. VI

Supply Chain Profile

FEEDLOT, GROW OUT	MEAT PACKER, POULTRY PROCESSOR	FABRICATOR, BONER FURTHER PROCESSING AS SEPARATE LOCATION	DISTRIBUTOR, CONSOLIDATOR,, WAREHOUSE CHAIN	SHOPS, STORES FAST FOOD	CONSUMER
1977					
122,000,000 Cattle 12,722,000 Sheep 54,934,000 Hogs Throughout U.S., trend to west.	25,969M Feedlot Cattle Kills 5,120M Non-feedlot 9,864M Cows Total Cattle Kill: 41,856M Total Meat Prod: 39,711B# Fed plants: 12 largest co's: 36.3% cattle Small packers, local lockers - big business for independent rendering. Packer/processor est. at 75% fresh.	Carcasses shipped to boners for processing. Remote boners in metropolitan areas. Major supply base for non-captive renderers - was probably 20% of raw material supply base (est.).	Chains did own packaging (Kruger). Frozen beef up modestly. Was probably 10-15% of raw material supply (est.).	Carcass beef was handled by in-store butcher (dewed). Chain store could have 10,000# waste/week (dewed). Major source of renderer material (15-25%) est. at higher margin	Per capita: Beef 86.2 Veal 2.6 Pork 40.5 Lamb 1.1 Chicken 30.4 Turkey 7.2 Fish 12.7
1989					***1987-1990***
99,484,000 Cattle 10,802,000 Sheep 55,299,000 Hogs Population moving to mountain, north central, and south central. 13 States = 96% of feedlots	Packer/Processor: 23%fresh, 76% processed meat. 26,675M Feedlot: Up 2.5% 1,423M Non-feed: Down 70% 6,337 cows: Down 30% (Small packer and locker have died out.) Total Kill: 35079M: Down 13.6% Total Meat Prod: 40,004B: Up 9% Fed Plants: 96.3% Beef, 91.4% Veal, 97.2% Pork. Farm slaughter down. 12 largest co's kill 70.4% cattle	84% of Sales from processed meats (handling). Carcass boned at packer. Prepack for store specialty items). Metropolitan area boners disappeared. Lower % for non-captive renderer on smaller volume.	Pre-packaged tray-ready beef, pork chicken is bought and distributed. Primal cuts vs. carcass.	No carcass beef or butcher in-store 100# of chicken and fish waste/week. Almost no beef/pork. Boxed beef in portion pack on the way. Waste grease moving to all-vegetable.	Per capita: Beef 68.6 Veal 1.2 Pork 44.7 Lamb 1.0 Chicken 44.3 Turkey 12.8 Fish 15.0
1991 - Beyond					
Downward trend in red meats. Up in fish and poultry. Continued consolidations expected. Major packers vertically integrating.	Only 2 of top 10 beef producers don't have rendering at all plants. Only 1 of top 10 doesn't render going in (hogs TAV). More prepack for store. (No fab or distribution in between.) May be the distributor. We may see the 4-80 rule.	May eventually cease to exist - shift back to point of kill. Packer will become fab, further process, etc. Sausage co's have low waste volume.	May have zero waste (Excel). All may go to store or consumer direct from packer.	Portion pack growth all tray ready. Precooked expected to grow also.	White meat is expected to continue its rise. Total meat consumption per capita level to declining. More vegetarians?

Non-Captive Renderer Participation (Estimated).

Consolidating horizontally and vertically.

[redacted]

EXHIBIT VII

TRENDS IN RAW MATERIAL SUPPLY

EXHIBIT Nº VII

RAW MATERIAL

	YESTERDAY:		TODAY:		TOMORROW:	
Beef	1000# Steer - 662# Carcass Carcass Beef to many fabricators, chains, etc. 1978: 24,000B# beef.	*Packer Rendered* 36% *Independent* 70%	1150# Steer - Only limited carcass beef. 714# carcass. Trend to leaner beef. Total volume down. Less prime beef - i.e. less fat. 1988: 23,425B# beef produced. This is shift of availability of 3-6 billion # of raw tonnage annually away from non-captive renderer. More beef, less fat.	*Packer Rendered* 70.4% *Independent* 30%	Trend expected to continue. Lower beef consumption, leaner. Less high quality product available to render. Tougher to make bleachable tallow.	*Packer Rendered* 85% *Independent* 15%
Pork & Other Red Meat	Leaner Pork has been around for some time. Pork Packers had own rendering.	*Packer Rendered* 59.4% *Independent* 40.6%	Lean is still the key. Less fat for renderer. Production of pork is shorter cycle than beef, less change seen.	*Packer Rendered* 64.2% *Independent* 35.8%	As IBP, ConAgra, and Excel get bigger, the smaller ones will be expected to leave. Non-captive renderer will probably see less good material.	*Packer Rendered* 70% *Independent* 30%
Poultry	Small regionalized production. Much seasonal production did not justify self-rendering.	*Packer Rendered* 25.0% *Independent* 75%	Integrated year round operations have grown enormously and do own rendering (Tyson). Economies of scale in rendering very favorable for low yield poultry. High capital cost born out of necessity. Captive may have 20¢/cwt edge.	*Packer Rendered* 50% *Independent* 50%	A leveling of growth is seen, but more consolidation will likely occur. The larger the processer, the more likely he will render. Trend expected to continue.	*Packer Rendered* 70% *Independent* 30%
Restarurant Oils	Many thrown away - quality poor - much overuse. Value as feed good.	*Packer Rendered* NA *Independent* 60%	Oil changed for food flavor. More vegetable oil used, giving high calories to waste oil. Recycling is seen as positive.	*Packer Rendered* NA *Independent* 90%	Beef tallow maybe phased out. Olestra may downgrade feed use as calories drop. May have to go to further processing (i.e. saponification) i.e. higher cost/capital - fatty acid splitter.	*Packer Rendered* NA *Independent* 90%

Market Share Statistics are Management Estimates.

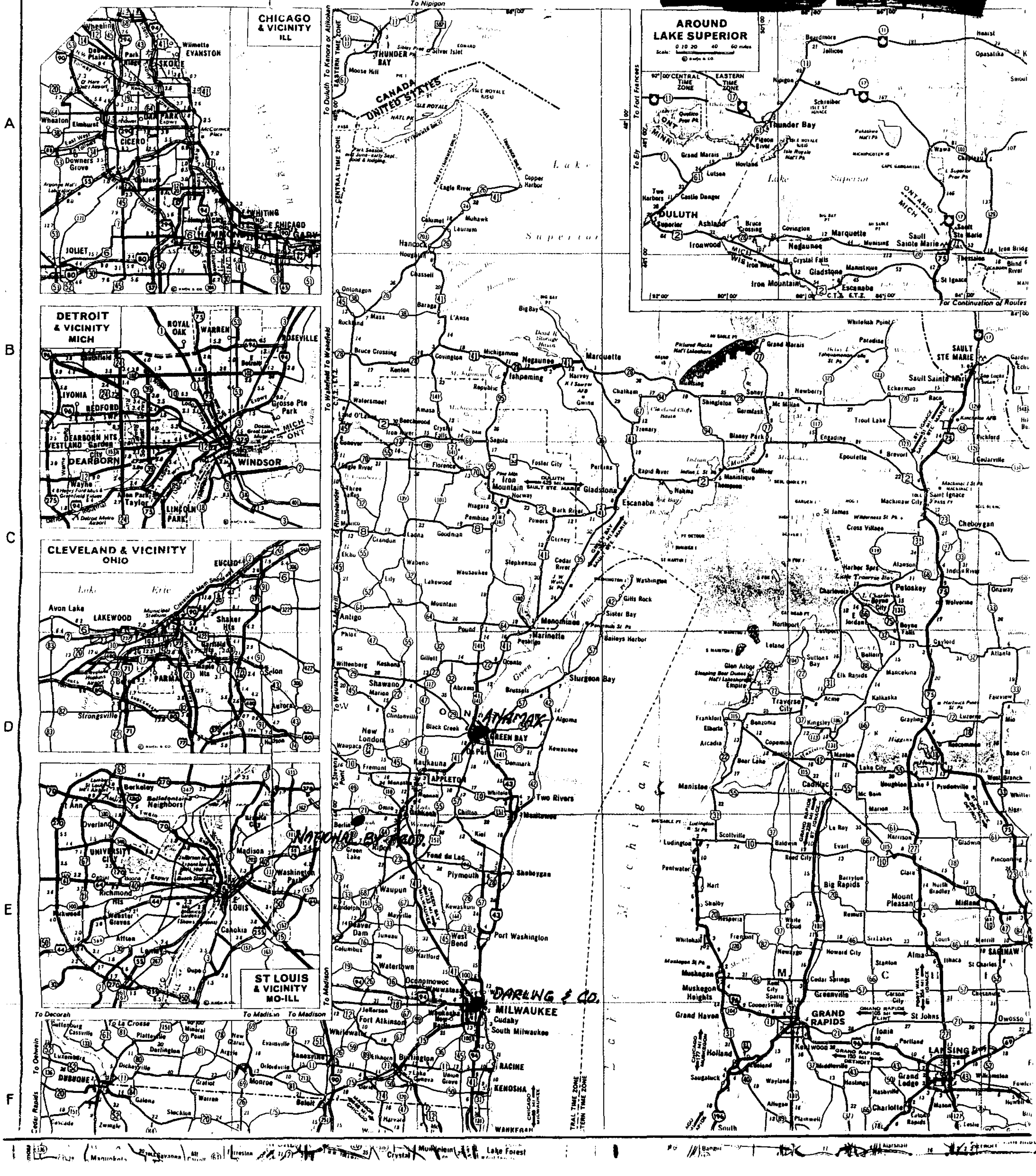
[redacted]

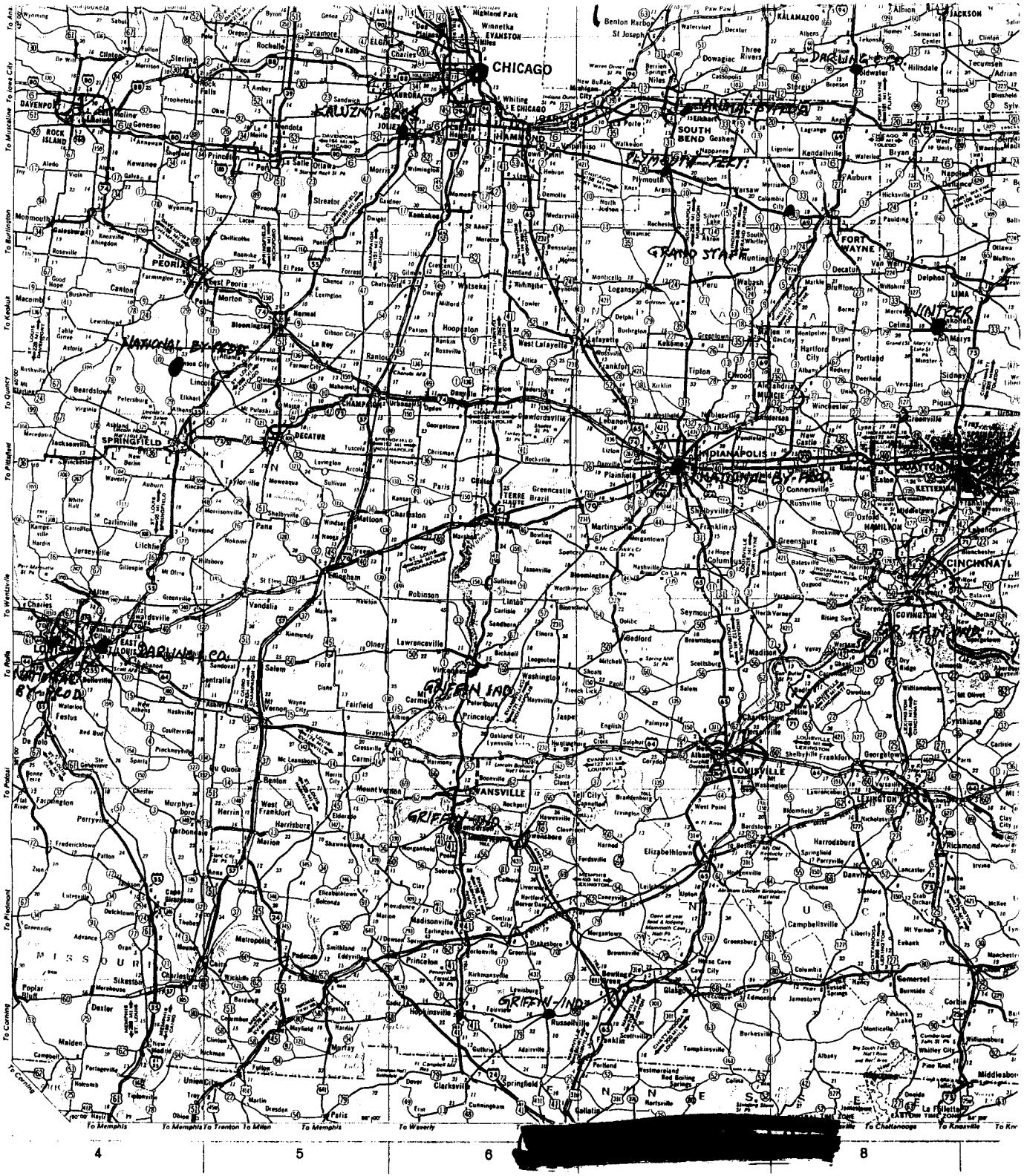
EXHIBIT VIII

MAP OF MAJOR INDEPENDENT RENDERING

PLANTS IN MIDWEST U.S.

[redacted]


AROUND LAKE SUPERIOR
CHICAGO & VICINITY ILL
DETROIT & VICINITY MICH
CLEVELAND & VICINITY OHIO
ST LOUIS & VICINITY MO-ILL
ANAMAX
NATIONAL BY-PROD.
DARLING & CO.
GREEN BAY
MILWAUKEE
GRAND RAPIDS
LANSING
SAULT STE MARIE
For Continuation of Routes
A
B
C
D
E
F


CHICAGO
KALUZNY-BEAR
PLYMOUTH FEET
GRAND STAFF
NATIONAL BY-PASS
INDIANAPOLIS
CINCINNATI
LOUISVILLE
EVANSVILLE
GREEN IND.
GRIFFIN IND.
DARLING CO.
FORT WAYNE
SPRINGFIELD
DECATUR
PEORIA
MISSOURI
To Memphis
To Trenton
To Milan
To Waverly
To Chattanooga
To Knoxville
4
5
6
8

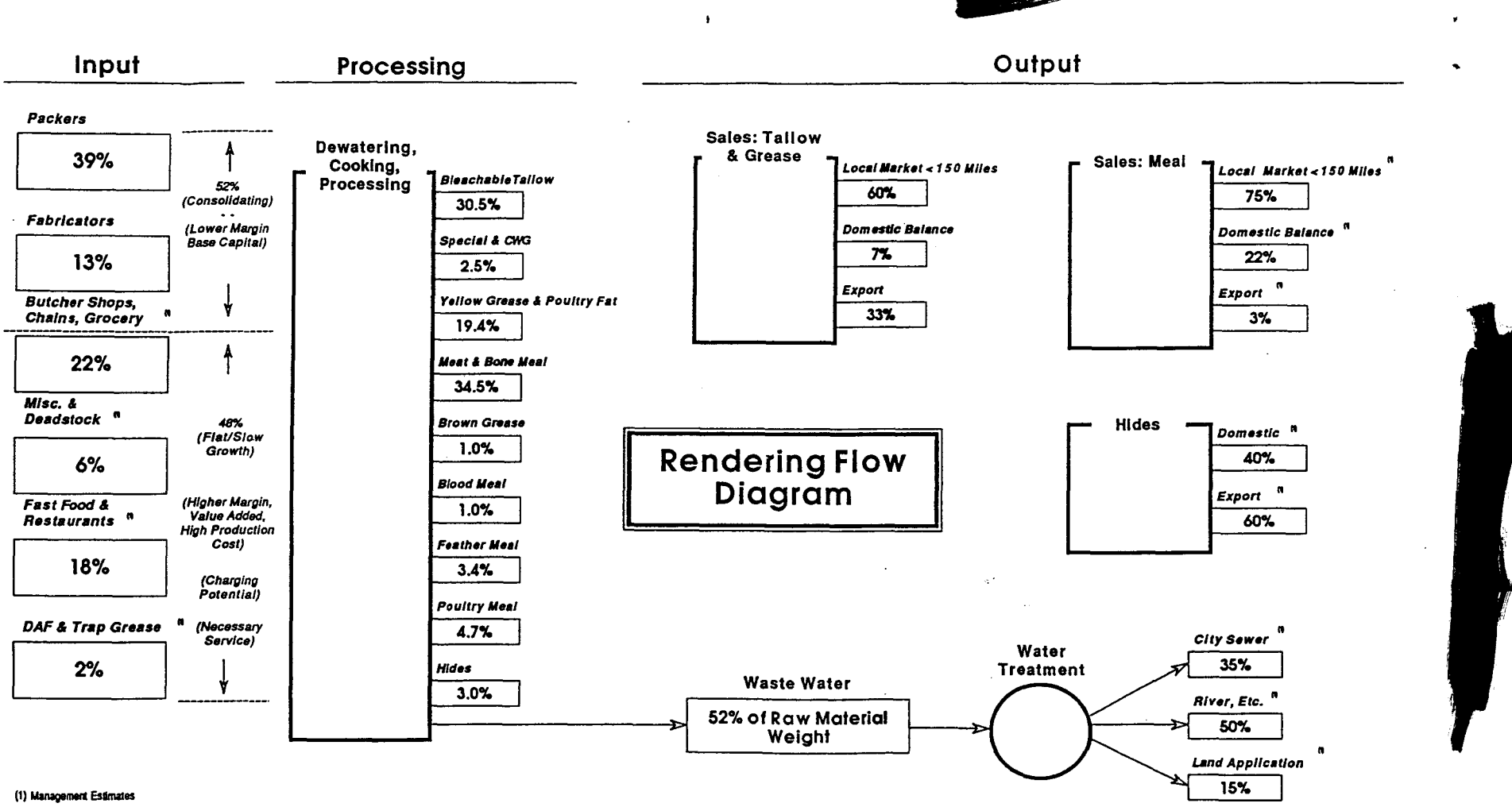
[redacted]

EXHIBIT IX

RENDERING FLOW DIAGRAM

9308D/51

EXHIBIT Nº IX



(1) Management Estimates