Salmonella Detectives
Research validates safety of animal proteins

Rendered Proteins Not to Blame
For *Salmonella* outbreak in eggs

Nutrient-based Feed Formulation: Strategies for Cost Reduction
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- Middle East

Babcock Wanson technicians are available to offer the most suitable solution for each specific case.
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No Matter What Your Odor Problem, LANTEC Has The Media Solution for You!

<table>
<thead>
<tr>
<th>Scrubbers using Q-PAC&lt;sup&gt;®&lt;/sup&gt; High Capacity Packing:</th>
<th>RTOs using LanteComb&lt;sup&gt;®&lt;/sup&gt; Heat Recovery Media:</th>
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</thead>
<tbody>
<tr>
<td>• Resist fouling with self-cleaning design</td>
<td>• Destroy all odors such as H₂S, mercaptans, DMDS, amines, organic acids &amp; aldehydes</td>
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<tr>
<td>• Substantially reduce pressure drop</td>
<td>• Minimize production loss due to bake outs</td>
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<tr>
<td>• Boost scrubber capacity</td>
<td>• Eliminate use of chemicals</td>
</tr>
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<td>• Operate above 600 fpm</td>
<td></td>
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<tr>
<td>• Improve removal efficiency</td>
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</tr>
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</table>

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No matter how the November elections turn out, the national GOP and Democrat political machines are already implementing their respective approaches to 2012 and the presidential election, if there’s one given on both sides of the aisle, it’s that federal spending is going to be slashed as a demonstration to the voting public that fiscal responsibility rules.

Such a move makes incumbents exceedingly nervous, as the ability to bring home the federal bacon, so to speak, always yields physical proof the members are looking out for the folks back home. But the anti-Congress, anti-incumbent juggernaut apparent in the run-up to this November is predicated in large part on a weak economy, lost jobs, and a fear the future will not be as rosy as the past, and much of the blame goes to the spendthrift behavior of both parties going back at least four, if not six years.

As I write this, the federal deficit is rapidly heading north of $13.4 trillion, compared to $407 billion in 2008, and an almost paltry $161 billion in 2007. And let us not forget this “debt” carries interest due. The biggest contributors to this deep ocean of red ink are the last two economic “stimulus” packages in 2008 and 2009 and the massive health care reform law, all piled on top of heavy spending from the last two economic “stimulus” packages in 2008 and 2009 and the massive health care reform law, all piled on top of heavy spending by the last two Congresses. Now, layer on a significant drop in federal tax income from both corporations and individuals as victims of the recession everyone hopes is over. Remembering the federal government has no money per se, but spends those dollars Americans pay in taxes, coupled with massive borrowing, and you get the picture.

President Barack Obama has already signaled his new-found fiscal conservatism with his first and second federal budgets, both of which were pretty much flat in spending overall, but which reflected his agenda through the reallocation of federal monies to his program priorities. He’s also told federal departments and agencies they can look forward to a five percent overall cut over the next two years, and he wants those folks to show him how they plan to do it. Now, while this may appear enlightened, there’s really only so much any White House can do as the president’s budget is generally viewed by Capitol Hill as nothing more than recommendations, and more often than not, the appropriators on both sides of the hill ignore White House recommendations.

Enter “earmarks” and “pay-go.” Earmarks are those personal line items in the various appropriations bills that designate quite specifically how monies will be spent. In years past, members didn’t even try to hide earmarks, and it was common to see specific institutions or state or local governments designated as the recipients of big pots of money to further one project or another, all championed by their “folks in DC.”

Today, earmarks must be revealed on a member-by-member basis, but make no mistake, they’re alive and well. Both parties are currently challenged to denounce earmarking, publicly avowing they will cease and desist forevermore. However, clever wording of public statements to the contrary, neither party has actually said it will walk away from the goose that lays the golden federal egg.

Then there is pay-go, a budget mechanism actually pretty elegant in its simplicity. The rule says you cannot spend “new” money on either existing or proposed programs unless you can find a way to pay for it, hence “pay as you go,” or pay-go. There are two ways to pay for spending under pay-go – either cut existing programs or charge fees for new programs to offset the costs so that the overall budget is unchanged.

As I write this, the federal deficit is rapidly heading north of $13.4 trillion, compared to $407 billion in 2008, and an almost paltry $161 billion in 2007. The Pain of Drunken Spending
expired at the end of 2009. However, House Speaker Nancy Pelosi (D-CA) ordered her tax gurus to find “offsets” to the cost of the very expensive and very controversial health care reform package, so bye-bye tax credit extension offsets. The squabbling over how to pay for the package has continued ever since.

While fiscal conservatism is everyone’s priority right now, flat spending, combined with paying down the deficit, means at least the next two years are going to be challenging for lawmakers, bureaucrats, and industry.

FDA is going to be given significant new food safety authority if Congress gets around to passing food safety legislation before the end of the year. Part of the $1.5 billion price tag for the Senate version of this legislation is offset by new user fees for registered companies – and renderers will be registered companies – on the cost of reinspections, mandated recalls, export certifications, and a voluntary import certification program. The House bill carries a much heftier price tag, but offsets that spending by also charging a fee to register to be regulated. The Senate bill does not charge a registration fee. Right now, the bill is hung up because

Senator Tom Coburn (R-OK), the self-appointed GOP deficit watchdog, wants all the costs of the new food safety regime offset. Industry is seriously nervous that this means to get food safety legislation to the president’s desk, it will have to eat heavy registration fees, as well as the other fees authorized in the food safety package.

House Agriculture Committee Chair Collin Peterson (D-MN) has been warning farmers and ranchers all summer long the deficit and spending freezes mean the baseline for the 2012 farm bill – the pot of federal money available for all discretionary programs, including direct payment programs – is going to be a whole lot smaller during farm bill deliberations than in past farm program go-rounds.

Peterson has pushed hard for beneficiaries of such programs, including corn, soybean, wheat, cotton, rice, sugar, and dairy producers, to get creative and come forward with recommendations to modify their programs that will allow his committee – if it is his committee next Congress – to maintain the so-called “income safety net” for producers, while trimming overall federal outlays.

Peterson has dangled the notion of a whole farm revenue “assurance” program, a spin on traditional crop insurance, that would provide income support to farmers when prices fall, based on each producer’s overall farm input costs. Some of the producer groups are taking Peterson at his word, while others are telling him his idea stinks.

And shock waves rolled through the heartland in mid-September when the Iowa Farm Bureau, fresh off its annual policy conference, publicly called for killing direct payment programs in exchange for a program much like what Peterson has suggested. This means the traditional regional battles – pretty much Midwest versus Deep South – over direct payments, payment limitations, and so forth just got a whole lot nastier a whole lot earlier.

So, it appears all will feel the pain of trying to undo what Congress has done over the last six years, namely spend like a drunken sailor. The key will be to ensure Congress comes at spending in a surgical way, reviewing and allocating funding based on priorities and available dollars, not by simply whacking everyone with a deficit reduction hammer.
Rendered Proteins Not to Blame for *Salmonella* Outbreak in Eggs

Since May 2010, the Centers for Disease Control (CDC) has identified a nationwide, four-fold increase in the number of *Salmonella* enteritis (SE) isolates and subsequently received reports of approximately 200 SE cases every week during late June and early July. This compares to an average of some 50 reports of SE to the CDC each week over the past five years. Many states have also reported similar increases since May 2010.

Epidemiologic investigations conducted by public health officials in California, Colorado, and Minnesota revealed several restaurants or events where more than one person fell ill with SE. Information from these investigations suggested that shell eggs were the likely source of infections in many of these restaurants or events.

This led to Wright County Egg of Galt, IA, conducting a nationwide voluntary recall in mid-August of shell eggs that it had shipped since May 19, 2010. Shell eggs from Wright County Egg were sold to distributors and wholesalers in 22 states and Mexico, who then distributed the eggs further throughout the country. On August 13, 2010, Wright County Egg recalled 380 million eggs under many different brand names.

One week later, Hillandale Farms of Iowa initiated an additional recall of eggs that went to grocery stores, distributors, and wholesalers in 14 states; these entities then distributed the eggs further throughout the country. In all, more than 500 million eggs were involved in the nationwide recall, which is less than one percent of eggs produced in the United States.

The Food and Drug Administration (FDA) immediately began an extensive investigation at both Wright County Egg and at Hillandale Farms that involved environmental and product sampling, and records review in order to help identify the source of the contamination. Environmental assessments of farm conditions and practices included pest and rodent controls, biosecurity plans and controls, environmental monitoring, sanitary controls, and feed and laying hen sources. The investigators also looked at commonalities between Wright County Egg and Hillandale Farms.

While the majority of the hundreds of samples FDA collected from Wright County Egg and Hillandale Farms during its investigation were still pending as of press time, the agency reported the following as of late August.

- **There were four positive environmental samples that match the DNA fingerprint of the outbreak strain of SE** that caused 2,600 people to become ill in 17 states. These were swab samples collected from manure, as well as traffic areas such as walkways, equipment, and other surfaces in and around the facility.
- **Two positive samples were collected from the feed mill.** The finished feed was provided to pullets raised at Wright County Egg facilities in Iowa. Pullets are distributed to all premises at Wright County Egg and Hillandale Farms. FDA has not found that this feed went to any other companies.

While an egg recall would normally be of little concern to the rendering industry, this recall brought rendered products into the forefront during the investigation, subsequent media briefings, and a congressional hearing. In a late August public statement to a major news organization, Wright County Egg stated the ingredient is held separately in an overhead bin that was tested by government officials prior to being mixed with their feed. The company provided FDA with information about the ingredient suppliers, Central Bi Products in Redwood Falls, MN, and a second rendering company in Iowa, and immediately notified both renderers of the testing results.

As of press time, FDA had not identified the definitive source(s) of SE on the farms. Joshua Sharfstein, FDA’s principal deputy commissioner, was quoted in a Des Moines Register news article, “…there was widespread *Salmonella* contamination on the farm and that there was no reason to believe that the feed ingredient, meat and bone meal, was the source of the bacteria."

As part of the investigation, the agency examined the storage of the feed and feed ingredients at the farms, feed handling practices on the farms, and other issues, such as origin of the feed ingredients. They are also examining the possibility of contamination of the feed by rodents or birds at the feed mill, whether equipment used to handle manure or bird carcasses is also used to handle feed, and a variety of other potential environmental causes. The feed mill is located within six miles of the various farms, with most of the farms located two miles or less from the feed mill.

On August 30, 2010, FDA issued inspectional observational reports through Wright County Egg and Hillandale Farms. The reports, which are available on the agency’s Web site at www.fda.gov/Safety/Recalls/MajorProductRecalls/ucm223522.htm, list “significant, objectionable conditions” observed by FDA’s investigators, such as failure to prevent stray poultry, wild birds, cats, and other animals from entering poultry houses; bird nests and birds in one poultry house, live rodents in at least one poultry...
house at several plants, and numerous live and dead flies in poultry houses at certain plants; and failure of employees to change protective clothing when moving from one house to another, and failure to clean and sanitize equipment prior to moving between poultry houses at one plant.

**Rendered Products are Safe**

Central Bi Products confirmed that FDA did an extensive investigation of its facility, taking over 70 samples to be tested. The company participates in the Animal Protein Producers Industry’s (APPI’s) *Salmonella* Reduction Education Program to ensure it produces safe feed ingredients. Although official FDA test results were still pending as of press time, Don Davis at Central Bi Products spoke with an investigator on September 20 who indicated the renderer’s retained samples for loads that were shipped to Quality Egg (Wright County Egg) were negative for SE.

“We are pretty confident everything will come back negative for SE,” Davis commented. The rendering company in Iowa was also investigated by FDA with its samples testing negative for SE as well. As of press time, FDA had not publically announced these test results, but did refute statements by Wright County Egg owners in a September 22 congressional hearing that meat and bone meal was the “most likely root cause.”

While rendered products leave the cooker negative of the bacteria, recontamination can occur anywhere along the way to the feed mill or in the feed mill. Renderers take many precautions to prevent recontamination while the meal is in their possession but have little control over their product once it leaves a facility. According to Davis, Quality Egg picked up the load of meat and bone meal August 6, and records show the meal was not delivered until August 9, providing ample opportunity for recontamination.

Established in 1984 as the biosecurity arm of the rendering industry, APPI became a standing committee of the National Renderers Association (NRA) in 2006. Its *Salmonella* Reduction Education Program involves testing rendered proteins weekly for presence of *Salmonella* and other bacteria. Participating renderers send samples to an independent laboratory for analysis. Over 95 percent of animal proteins produced in North America are manufactured at facilities that participate in APPI’s *Salmonella* Reduction Education Program.

**The Role of Testing in Rendering**

Testing of protein meals for bacteria is used to check the system, not to check every load produced. Renderers also routinely test batches of rendered fats for commonly used pesticides and contaminants before they are released for feed use. Widespread testing of rendered ingredients for the presence of SE is not necessary, cost-efficient, or practical. Research shows SE is not a hazard likely to occur in rendered products. Serotype testing for *Salmonella* is an expensive procedure that can take up to eight days. Like other feed ingredient suppliers and feed manufacturers, the rendering industry lacks the infrastructure to test and hold for that period of time.

While the positive rate for all *Salmonella* serotypes is very low, currently at 7.5 percent, renderers continually strive for zero contamination. Many other feed ingredients, including corn and soybean meal, also have a difficult time meeting a zero rate. FDA research shows that many common feed

Continued on page 35
Table 1. Base Diet for Discussion Purposes

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Feed Cost: $206.1426</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost $/cwt</td>
<td>Minimum %</td>
</tr>
<tr>
<td>Corn (digestible)</td>
<td>5.50</td>
</tr>
<tr>
<td>High protein corn DDGS (digestible)</td>
<td>10.00</td>
</tr>
<tr>
<td>Soy (digestible)</td>
<td>15.50</td>
</tr>
<tr>
<td>Dicalcium phosphate</td>
<td>43.00</td>
</tr>
<tr>
<td>Limestone</td>
<td>4.00</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>40.00</td>
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<tr>
<td>Salt</td>
<td>4.00</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>8.00</td>
</tr>
<tr>
<td>Choline chloride</td>
<td>17.00</td>
</tr>
<tr>
<td>Trace mineral mix</td>
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</tr>
<tr>
<td>Vitamin premix</td>
<td>300.00</td>
</tr>
<tr>
<td>Avatec</td>
<td>250.00</td>
</tr>
<tr>
<td>Bacitferm</td>
<td>250.00</td>
</tr>
<tr>
<td>Selenium premix</td>
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<tr>
<td>Copper sulfate</td>
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<tr>
<td>Lard</td>
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<tr>
<td>DL-Methionine</td>
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<tr>
<td>Pork meal (digestible)</td>
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<tr>
<td>Fish meal (digestible)</td>
<td>60.00</td>
</tr>
<tr>
<td>Wheat bran (digestible)</td>
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<tr>
<td>Lysine HCL</td>
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<tr>
<td>Threonine</td>
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</tbody>
</table>

*Note: cwt = hundredweight

Table 2. Base Diet Minus Pork Meal Constraint

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<th>Ingredient</th>
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<tr>
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<td>10.00</td>
</tr>
<tr>
<td>Soy (digestible)</td>
<td>15.50</td>
</tr>
<tr>
<td>Dicalcium phosphate</td>
<td>43.00</td>
</tr>
<tr>
<td>Limestone</td>
<td>4.00</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
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<td>Salt</td>
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</tr>
<tr>
<td>Potassium chloride</td>
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</tr>
<tr>
<td>Choline chloride</td>
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<td>Trace mineral mix</td>
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<td>Avatec</td>
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<tr>
<td>Bacitferm</td>
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<td>Selenium premix</td>
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<td>Copper sulfate</td>
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<tr>
<td>Lard</td>
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<td>Pork meal (digestible)</td>
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<tr>
<td>Wheat bran (digestible)</td>
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<tr>
<td>Lysine HCL</td>
<td>120.00</td>
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<tr>
<td>Threonine</td>
<td>120.00</td>
</tr>
</tbody>
</table>

Feed ingredient costs have risen, competition is global, over-production depresses prices, and companies still need to make a profit. While there are a number of newer strategies to reduce feed costs, such as digestible formulation, ideal proteins, etc., as a consulting nutritionist and production specialist, I see formulas from a variety of companies around the world. But the most common change that can result in cost savings is changing from what I would call ingredient-based formulations to nutrient-based formulations.

Computer formulation today results in a least-cost diet, but this is least-cost only within the framework of the constraints placed on the formulation matrix. In an ingredient-based formula, one will see a number of constraints on specific ingredients (i.e., pork meal at three percent of the diet). The reasons for these constraints are varied, but have significant cost implications and in many cases, frankly, have not been thought through very clearly or perhaps for some time. I have seen diets where all the major ingredients are basically fixed in place and the computer is turned into a calculator because there are no choices on how the diet can be formulated.

Taken to the extreme, constraints on ingredients will negate the benefits of least-cost formulation. On this end, feed costs can be reduced by as much as 40 percent if the firm is willing to make some serious, but cost-effective changes (such as procuring more ingredients), and in well-formulated diets, cost savings have been in the six to eight percent range strictly through reformulation with similar or better performance.

In a nutrient-based formulation, we are going to place constraints on specific nutrients and remove constraints on specific ingredients (premixes and additives excluded). The focus should be on those nutrients of high cost to the diet, which include energy, protein/amino acids, and phosphorus. Whether salt is fixed as an ingredient or constrained as sodium on the nutrient side will not affect cost significantly (this is not to say that one shouldn’t look at everything) as the cost of sodium provision is quite low.

Practical Strategies to Reducing Formulation Costs

This article will focus on nutrient-based formulas. Assuming we are at the upper end of formulation and already formulating on a digestible amino acid basis and such, let’s begin with a bit of philosophy. The computer should be looked at as a research tool to reduce diet cost (how much do the additional nutrients added as a safety factor really cost?), as an education tool to teach nutrition, and as a way to actually formulate a diet for the feed mill.

It really helps to spend a good bit of time on the computer formulating diets to become familiar with what is happening as well as having a pretty good understanding of what nutrients are
Feed costs can be reduced by as much as 40 percent if the firm is willing to make some serious, but cost-effective changes such as procuring more ingredients.

in which ingredients. The other thing one should try to avoid is categorizing of ingredients as good/bad, protein/energy, etc. Ingredients should be looked at strictly on their available nutrient content relative to their cost. If an ingredient(s) is in the formula in a very round number (five percent), or if nutrients that are available in a pure form are above their constraints, cost savings are likely.

Step 1: Make sure your database has all of the possible ingredients that could be of value to the formulas you will be making. The possible solutions for 20 percent protein content with corn and soybean meal is one. Increasing the number of ingredients will give the computer the ability to select for nutrients that are needed and thus increase the potential number of possible solutions. Trying ingredients that you can purchase but do not have storage for should also be part of the “research.” Added storage capacity may be cost-effective. Add as many purified ingredients as possible as well. If you plan to put a constraint on the nutrient, a purified ingredient will probably save you money even though it may not be obvious.

Years ago I was walking by a class in our building where the students were computer formulating swine rations. The instructor grabbed me and said they were having a problem with protein being too high in the ration that had been formulated. I looked at the diet and told them the problem was choline, they needed a choline source. Of course they believed I was crazy, but addition of choline chloride solved the problem since the computer selected soybean meal as its choline source, resulting in higher protein than needed.

Don’t forget additives such as phytase as these may act the same as a purified ingredient in the formula. Also make sure you have vetted your database so that it is correct based on digestibility/availability values that you are formulating on. On a number of occasions I have seen no “available phosphorus” value for a rendered product or cystine left out of total sulfur amino acids.

Step 2: On to the formulation page. Remove constraints

---

**Table 3. Diet 2 Minus the Maximum Protein Constraint**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Cost $/cwt</th>
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<th>Amount %</th>
<th>Maximum %</th>
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<td>0.00</td>
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<td>250.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Bacferm</td>
<td>250.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Selenium premix</td>
<td>30.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Copper sulfate</td>
<td>30.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Lard</td>
<td>14.00</td>
<td>3.00</td>
<td>3.000</td>
<td>3.00</td>
</tr>
<tr>
<td>DL-Methionine</td>
<td>180.00</td>
<td>0.00</td>
<td>0.229</td>
<td>100.00</td>
</tr>
<tr>
<td>Pork meal (digestible)</td>
<td>12.00</td>
<td>0.00</td>
<td>7.836</td>
<td>100.00</td>
</tr>
<tr>
<td>Corn DDGS (digestible)</td>
<td>8.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Fish meal (digestible)</td>
<td>60.00</td>
<td>0.00</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Wheat bran (digestible)</td>
<td>7.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Lysine HCL</td>
<td>120.00</td>
<td>0.00</td>
<td>0.054</td>
<td>100.00</td>
</tr>
<tr>
<td>Threonine</td>
<td>120.00</td>
<td>0.00</td>
<td>0.091</td>
<td>100.00</td>
</tr>
</tbody>
</table>

**Table 4. Diet 3 with One Percent Minimum Fat Constraint**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Cost $/cwt</th>
<th>Minimum %</th>
<th>Amount %</th>
<th>Maximum %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn (digestible)</td>
<td>5.50</td>
<td>0.00</td>
<td>63.360</td>
<td>100.00</td>
</tr>
<tr>
<td>High protein corn DDGS (digestible)</td>
<td>10.00</td>
<td>0.00</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Soy (digestible)</td>
<td>15.50</td>
<td>0.00</td>
<td>26.678</td>
<td>100.00</td>
</tr>
<tr>
<td>Dicalcium phosphate</td>
<td>43.00</td>
<td>0.00</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Limestone</td>
<td>4.00</td>
<td>0.00</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>40.00</td>
<td>0.20</td>
<td>0.200</td>
<td>0.20</td>
</tr>
<tr>
<td>Salt</td>
<td>4.00</td>
<td>0.30</td>
<td>0.300</td>
<td>0.30</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>8.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Choline chloride</td>
<td>17.00</td>
<td>0.00</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Trace mineral mix</td>
<td>40.00</td>
<td>0.10</td>
<td>0.100</td>
<td>0.10</td>
</tr>
<tr>
<td>Vitamin premix</td>
<td>300.00</td>
<td>0.08</td>
<td>0.075</td>
<td>0.08</td>
</tr>
<tr>
<td>Avatec</td>
<td>250.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Bacferm</td>
<td>250.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Selenium premix</td>
<td>30.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Copper sulfate</td>
<td>30.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Lard</td>
<td>14.00</td>
<td>1.00</td>
<td>1.000</td>
<td>100.00</td>
</tr>
<tr>
<td>DL-Methionine</td>
<td>180.00</td>
<td>0.00</td>
<td>0.232</td>
<td>100.00</td>
</tr>
<tr>
<td>Pork meal (digestible)</td>
<td>12.00</td>
<td>0.00</td>
<td>7.863</td>
<td>100.00</td>
</tr>
<tr>
<td>Corn DDGS (digestible)</td>
<td>8.00</td>
<td>0.00</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Fish meal (digestible)</td>
<td>60.00</td>
<td>0.00</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Wheat bran (digestible)</td>
<td>7.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Lysine HCL</td>
<td>120.00</td>
<td>0.00</td>
<td>0.089</td>
<td>100.00</td>
</tr>
<tr>
<td>Threonine</td>
<td>120.00</td>
<td>0.00</td>
<td>0.103</td>
<td>100.00</td>
</tr>
</tbody>
</table>
on all major ingredients (they can be added back later if need be) and place constraints on nutrients of concern. Look at constraints such as protein and realize that these may negate constraints on amino acids. Make sure that the active database has all potential ingredients you found and added to your database.

Step 3: Formulate. Now we need to look at the diet and determine if we basically have a sound starting point. If you traditionally feed a corn-soybean meal-based diet, is it still primarily corn-soy? Look at each ingredient and check your comfort level. Would an enzyme addition help here (remember the cost associated)?

Next check for what I refer to as pressure on the matrix, which is where a nutrient or ingredient is pushing against a constraint. An example would be a three percent maximum on pork meal. If pork meal is at three percent, then it is pushing against the constraint and is putting pressure on the matrix. This can be assumed whenever a diet has an ingredient with a very round number.

Is threonine exactly at the nutrient requirement while protein is above? A pure source of threonine or a different protein source may help to reduce costs. Adjust the diet as needed followed by evaluation. Is adding a small amount of that extra ingredient worth the cost savings? Is the level of fat in the diet appropriate for your mill? Adjust as needed.

Example Formulas

In Table 1, we have taken a 22 percent protein diet and started with a set of constraints such that protein is both minimum and maximum at 22 percent, pork meal is set at three percent, the fat is set at three percent, and there are few other feedstuffs available. I have included pure amino acid sources assuming threonine is being used at this point. Assume the nutrient constraints are set and all requirements are being met with no changes on nutrients (not shown). Our base diet is typically corn-soy with a price of $206.14 per ton.

In Table 2, we took the constraint off of the pork meal, which brings it up to 6.7 percent of the diet, which should cause no problems, and cost goes down to $199.91 per ton, or about a three percent reduction.

In Table 3, we’ve removed the maximum on protein and let the protein actually go up slightly, but results in a cost saving of about $0.50 per ton. The protein being above the minimum tells us there are savings yet to be had on protein.

In Table 4, we took the constraints off fat, but left a one percent minimum as many prefer this for feed mill lubrication.

In well-formulated diets, cost savings have been in the six to eight percent range strictly through reformulation with similar or better performance.
dust control, etc. This will add a bit to the cost versus letting it go below one percent (note the pressure on the matrix at this point), but is deemed worth the cost. The cost savings here is not dramatic and energy is slightly lower. This is where we may need to make a conscious decision to go backwards and push more fat into the ration.

In Table 5, we added a variety of ingredients with no constraints just to show why one still needs to have some knowledge of nutrition, ingredient usage, etc. While the diet cost is quite a bit lower, we have lost soybean meal entirely. Probably not a good idea, so we are going to have to back up and put some constraints back on.

As our final example, in Table 6, we pulled back the distillers dried grains with solubles (DDGS) to 10 percent of the diet (five percent of regular and high protein) and now are back to a diet that would be acceptable to feed and at a cost of $190.79 per ton versus our starting point of $206.14, or about eight percent cost savings. Note that both forms of DDGS are pressuring the matrix. If we go with the high protein only to maintain a comfort level at 10 percent total DDGS, we cut another $0.50 per ton, but would still have pressure indicating it would prefer more (32.567 percent to be exact). Allowing a greater level of DDGS would cut costs more, but at the expense of maintenance of a primarily corn-soy based diet. Whenever there is pressure, there are cost savings.

**Summary**

Although there are unlimited scenarios, starting points, and end points to computer diet formulation, presented above are just some ideas about using nutrient-based formulation to help control feed costs in a practical way. With feed being such a large part of the total picture, one must be constantly looking at the package to maintain the competitive edge needed to remain a part of the global animal feed industry.

**About the Author**

Dr. Jeffre D. Firman teaches and does research in the area of poultry production and nutrition at the University of Missouri as well as U.S. and international consulting with poultry and pigs.

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**Liquids to Value**

The GEA Westfalia Separator SE 125 represents the most up to date design in clarifiers for rendering. This powerful equipment is used for separating and clarifying both edible and inedible fats. Benefits of the improved design include:

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- Reduction of fines in current installations to as low as 0.03%
- No pre- or post-processing equipment required.

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Proud member of the National Renderers Association
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The rendering industry is becoming more globally connected and thus facing more challenges. For 77 years, the National Renderers Association’s (NRA’s) annual convention has been a venue for renderers to gather and find solutions to those challenges. The convention has also provided renderers an opportunity to meet with industry suppliers and discuss the latest technologies and services offered. Part of the success of each NRA convention is the dedicated companies that sponsor or exhibit. To showcase these generous companies, each was invited to provide a brief educational summary. Presented below is an alphabetical guide to this year’s NRA convention sponsors and exhibitors who responded to the invitation by press time.

AC CORPORATION
(336) 273-4472  www.accorporation.com

AC Corporation has been providing the rendering industry with quality equipment with a focus on air pollution control for over 40 years. Every project is designed to meet the specific needs of the facility, whether it is a single piece of equipment or a turnkey installation. Experienced craftsmen set AC Corporation apart and are the backbone of the company. A staff of engineers and project managers can handle any rendering project from the smallest duct jobs to complete plant design and installation. AC Corporation personnel look forward to being able to say thank you to everyone in attendance at this year’s NRA convention tabletop exhibit in Naples, FL.

ALLOY HARDFACING AND ENGINEERING CO., INC.
(952) 492-5569  www.alloyhardfacing.com

Alloy offers a complete line of rendering equipment and services. The company also offers wastewater treatment equipment, and the following: batch systems – blow tanks, cookers (new, rebuilt, and parts), perc pans, expansion domes, and temperature sensing systems; continuous systems – positive displacement pumps, continuous cookers, rotors and parts, control wheels, drainer/screeners, and sedimenters; feather systems – raw feather bins, hydrolyzers, dewatering presses, hydrolyzed feather pans, and dryers; and wastewater systems – Alloy Gravity Separator.

Alloy also offers engineering services, including plant layouts, appraisals, fire evaluations, return on investment calculations, thickness testing, custom machine design and build, and American Society of Mechanical Engineers calculations and design. See ad on page 14.

AMERICAN PROTEINS, INC.
(770) 886-2250  www.americanproteins.com

American Proteins currently has four factories in Georgia and Alabama that manufacture various proteins and fats that are used as high-energy ingredients for livestock, poultry, and pet food diets.

Through the years, American Proteins has shaped its history of success – a combination of foresight, innovation, and a business philosophy that strongly emphasizes service and value to customers. The company stands at the brink of an exciting new era of industry and environmental leadership.

ANCO-EAGLIN, INC.
(336) 855-7800  www.ancoeaglin.com

Anco equipment has been providing turnkey solutions to the rendering industry since 1902. The company is due to complete, on schedule, its new 75,000-square-foot manufacturing facility located in High Point, NC. Scheduled to open October 10, 2010, the new facility will allow the company to increase the current manufacturing capacities and meet increased demands of its “Sure Plate” continuous disc cooker, a state-of-the-art design unique to the rendering industry.

To further expand their capabilities, Anco partnered with Redox, a European leader in wastewater treatment that specializes in complete wastewater treatment plants, non-chemical treatment, sludge fat removal, and mechanical dewatering systems. See ad on page 23.

BAKER COMMODITIES, INC.
(323) 269-2801  www.bakercommodities.com

Baker Commodities, Inc., has been one of the nation’s leading providers of rendering and grease removal services since 1937.

Baker converts animal by-products into commercial commodities such as high protein ingredients for poultry feed and pet food, and tallow, a valuable ingredient in soaps, paints, cosmetics, and more. The company’s facilities also convert used cooking oil into yellow grease, a key ingredient in biodiesel fuels. Baker is committed to saving the environment by finding sustainable ways to support the food production and restaurant industries.
Baker’s commitment to “Quality and Pride….Worldwide” ensures their customers receive the highest quality of finished products and services.

See ad on back cover.

BDI – BioEnergy International AG
(43) 316 4099 100  www.bdi-bioenergy.com

BDI – BioEnergy International AG is a market and technology leader in the construction of customized biodiesel plants using its own multi-feedstock process that can produce biodiesel from different raw materials like vegetable oils, used cooking oils, and animal fats.

Since 1996, BDI has developed technologies for the optimal processing of by-products and waste products and owns an extensive patent portfolio resulting from its in-house research and development activities. BDI also supplies efficient plant concepts in the waste-to-biofuels field that produce biogas from by-products of biodiesel production and from organic industrial and municipal waste. Range of services include public authority, basic and detailed engineering, installation, start-up, and after-sales support.

See ad on page 25.

Bolton & Menk, Inc.
(515) 233-6100  www.bolton-menk.com

Bolton & Menk, Inc., a 17-year NRA member, is a consulting engineering firm with 250 professionals, including 14 environmental engineers with advanced degrees.

Bolton & Menk provides professional engineering services to the rendering, meatpacking, and food processing industries, including wastewater and water treatment facility design; permit negotiation; regulatory enforcement action review and defense; waste reduction studies and environmental audits; and city water and sewer user agreement negotiations.

Bolton & Menk is engaged in these current issues: U.S. Environmental Protection Agency discharge standards for total nitrogen in the rendering industry; chloride and total dissolved solids discharge; and effluent toxicity.

Brown Industrial, Inc.
(937) 693-3838  www.brownindustrial.com

Brown Industrial, Inc., has specialized in mobile equipment for the rendering industry for over 55 years. The WaBo line includes container style grease units, fat and bone bucket units, barrel grease units, dead stock units, barrel bodies, and dump trailers. WaBo offers standard bodies, trailers, and options, as well as custom applications.

Over the past 10 years, Brown Industrial has continually updated its shop and equipment to allow them to manufacture the highest quality units available. The company appreciates the support it has received from the rendering community through the years, and looks forward to serving the industry into the future.

Centrifuge Chicago Corporation
(866) 346-6800  www.centrifugechicago.com

Centrifuge Chicago Corporation specializes in the repair and rebuilding of decanter, disc stack, tubular, pusher, and basket centrifuges. They offer a professional service at a competitive price. Conveniently located in the Chicago area, the company services centrifuges throughout the United States and offers nationwide sales of parts and equipment.

Centrisys Corporation
(209) 304-2200  www.centrifuge-systems.com

Centrisys Corporation is a U.S. manufacturer of high performance decanter centrifuges for two- and three-stage separations and in the last three years has become a leader among meat and poultry processors and renderers.

Applications include three-way separation of dissolved air flotation skimmings, yellow grease and tallow clarification, and wastewater sludge dewatering. Centrisys also offers high-speed vertical machines for clarification and separation duties.

Along with top-quality American-made decanters, Centrisys offers full rebuild services for customers with decanter and disc-type centrifuges from other manufacturers including Alfa Laval, Sharples, Westfalia, and Bird. Stop by Centrisys’ tabletop exhibit at NRA’s 77th annual convention in Naples, FL.

See ad on page 27.

Chem-Aqua
(800) 527-9921  www.chemaqua.com

Chem-Aqua is a full service water treatment company specializing in cost-effective, efficient, custom-designed water treatment programs for commercial, institutional, and industrial accounts. Chem-Aqua takes a value-added approach to water treatment and strives to meet or exceed their customers’ expectation by protecting their equipment investments and improving their overall utility consumption.

Chem-Aqua provides state-of-the-art products, on-site service, and cutting-edge control and feed equipment. They service customers in over 50 countries, have their own on-site laboratory, research, and development facilities, and have a staff of highly-trained field engineers that provide service to meet your water treatment needs.

Darling International, Inc.
(800) 800-4841  www.darlingii.com

Darling International, Inc., is America’s leading provider of rendering, recycling, and recovery solutions to the nation’s food industry, converting valuable waste streams into sustainable feed and fuel products. For more than 125 years, Darling has been
Sponsors, Exhibitors Continued from page 17

dedicated to following a philosophy of sustainability by recycling virtually all of the waste materials they collect into usable products in an environmentally safe manner. Today, these services are even more essential to society as a means to protect animal and human health, reduce wastes going into landfills, and to avoid greenhouse gas production.

DE SMET ROSEDOWNS
44 (0) 1482 329864 www.rosedowns.co.uk

De Smet Rosedowns is probably the oldest engineering company in the United Kingdom, founded in 1777. Situated in Hull, once the oil seed crushing center of the world, the company became involved in the oil and cattle feed industry in the early 1800s.

De Smet Rosedowns entered the North American market in the 1950s, firstly in fish meal, then rendering in the 1990s, supplying presses for all duties.

Some years ago the company formed a working relationship with Jenkins Centrifuge that is now being taken further. With Jenkins’ help, De Smet Rosedowns is doubling the size of its workshop, giving the company the capability to stock more parts and provide better service to its customers.

See ad on page 37.

DIVERSIFIED LABORATORIES, INC.
(703) 222-8700 www.diversifiedlaboratories.com

For over 30 years Diversified Laboratories, Inc., has specialized in the detection of pesticides, PCBs, and other chemical contaminants in rendered fats, oils, and meals, and complete feeds. The company also offers complete lipid quality tests ranging from insolubles (for bovine spongiform encephalopathy testing) to moisture, impurities, and unsaponifiables; free fatty acids; peroxide value; iodine value; and many more.

Diversified Laboratories has a reputation for value, quality, and service and has supported the rendering industry for many, many years. Their laboratory is the only independent laboratory in the United States with U.S. Department of Agriculture/Food Safety Inspection Service accreditations for both chlorinated hydrocarbons and PCB residue testing and ISO/IEC 17025 accreditation.

DIVERSEY, INC.
(641) 455-6635 michael.gruver@diversey.com

Diversey, Inc., formerly known as JohnsonDiversey, is a family company based in Sturtevant, WI. As members of the NRA, Diversey introduced its ReNew Air Scrubber Program to the industry three years ago as an innovative, sustainable alternative to traditional oxidizer technologies for the treatment of wet air scrubbers. The ReNew program contains no Superfund Amendments and Reauthorization Act reportables and conserved over 25 million gallons of fresh water for its rendering customers in 2009 while reducing customer’s total cost to operate by an average of 18 percent.

Diversey also provides specialty chemical solutions for cleaning, defoamers, and comprehensive water treatment programs.

FARMERS UNION INDUSTRIES, LLC
(507) 637-2938

Farmers Union Industries, LLC, has six operating divisions: Central Bi-Products, Northland Choice, Midwest Grease, Pet Care Systems, Redwood Metal Works, and FUMPA Biofuels.

Central Bi-Products is the rendering division that operates two complexes in Redwood Falls and Long Prairie, MN. Northland Choice is a pet food ingredient processor with three facilities in Minnesota. Midwest Grease provides waste restaurant grease collection service in the upper Midwest states.

Pet Care Systems in Detroit Lakes, MN, manufactures cat litter from wheat. The product, “Swheat Scoop,” is an all-natural, clumpable, flushable litter that is biodegradable. Redwood Metal Works is a metal fabricating and aluminum trailer manufacturing facility located in Redwood Falls, MN. FUMPA Biofuels is a producer of biodiesel.

FLORIDA BY PRODUCTS
(863) 425-6706 info@floridabyproducts.com

Florida By Products offers a wide range of services targeting the hospitality and food service/restaurant industries. They provide a clean, environmentally safe, hassle-free way of recycling waste cooking oil, grease trap maintenance services, and line jetting services. Recently expanding into the biodiesel industry, the company offers custom blended biodiesel and other processing services.

Florida By Products can also provide consulting services for the rendering industry. The business team of Roger Zehe, Jay Ford, and Richard Stradtman offers over 75 years combined experience, having dedicated their careers to the rendering business.

GEA WESTFALIA SEPARATOR
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GEA Westfalia Separator is a world leader in providing mechanical separating equipment to the rendering industry. The company offers a wide range of decanters and separators appropriate for processing both edible and inedible fats. Of particular interest is their SE 125, a relatively new separator that provides very high gravitational forces and reduces fines to as low as .03 percent. No pre- or post-processing equipment is required.

With six regional offices throughout North America, GEA Westfalia Separator is the only centrifuge manufacturer with two full-service repair facilities – one on each coast.

See ad on page 13.

Continued on page 20
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  Finely ground fluidized raw material cooks under vacuum in a double-effect evaporator system, using your steam twice. You’ll get reduced steam cost, as well as lower temperature operation to insure quality.

- **Retrofit Evaporator Systems**
  Waste heat vapors from a continuous cooker are used to remove water from raw material under vacuum for increased throughput and steam efficiency.

- **Grease Systems**
  Remove water from restaurant grease using live steam or waste heat from a cooker. Dry grease goes to a centrifuge for solids removal, then to storage.

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For over 67 years, Griffin Industries has produced quality animal fats, proteins, bakery by-products, hides, organic fertilizers, and renewable fuels. As a long-time supporter of the NRA with an unwavering commitment to food safety and biosecurity, Griffin ensures products are produced under the most stringent hazard analysis and critical control point programs. All Griffin and Bakery Feeds plants are Safe Feed/Safe Food as well as Rendering Industry Code of Practice certified.

In addition, Griffin’s corporate headquarters in Cold Spring, KY, is a Leadership in Energy and Environmental Design, or LEED, certified green building and all operations are recognized by Audubon International as models for environmental stewardship excellence.

HAARSLEV, INC.
(816) 799-0808 www.haarslev.com

Haarslev Industries, founded as Haarslev Machine Factory in 1973, specializes in equipment for the rendering industry. Over the years, Haarslev has acquired Svaertek, Atlas-Stord, and most recently Tremesa. Together these companies represent over 100 years of experience in the industry.

Haarslev has specialized in mechanical and thermal dewatering for various industries and today is recognized as a world leader in designing and installing equipment for the rendering and fish meal industries.

Working closely with its customers, Haarslev focuses on energy efficiency, environmental protection, and reliability. As most of their equipment is manufactured in its own facilities, they are able to achieve the high quality customers have come to expect.

See ad on page 1.

JENKINS CENTRIFUGE CO., LLC
(800) 635-1431 www.jenkinscentrifuge.com

The Jenkins Centrifuge team wants to thank the members of the NRA for the opportunity to be an associate member and attend the annual convention. Jenkins is looking forward to attending this year’s convention as a sponsor and exhibitor for the thirtieth year. If it was not for the loyalty of their NRA customers, there would be no Jenkins Centrifuge Co.

Thanks again for the 30 years of friendship and loyalty that has confirmed Jenkins made the right decision to dedicate its service to the rendering industry.

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(800) 795-8454 www.mactrailer.com

MAC Trailer Mfg., Inc., a leading manufacturer of end dump, waste, platform, and pneumatic trailers, is pleased to announce their new membership into the NRA. The company’s newest addition to its product line, the MAC rendering trailer, has been very well received by the rendering industry. The trailer features a patent pending inner man door for the divider gates in the center compartment. It is “safety first” with this standard feature.

MAC also offers a fully hot dipped galvanized frame option to help combat the applications of the rendering industry. Please contact MAC Trailer for specs, pricing, and availability, or visit their Web site for their full product line information and dealer locations.

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See ad on page 15.

Redwood Metal Works
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jrobertson@redwoodmetalworks.com

In addition to the all-aluminum rendering trailers manufactured by Redwood Metal Works, they now offer the rendering industry odor and particulate control systems. Available are single- and multi-stage venturi and packed bed scrubber systems from 1,000 to 100,000 cubic feet per minute, cyclone separators, and chemical monitoring and recording instruments custom tailored to a customer’s needs. Services to evaluate the performance of existing control systems at a plant site are available at very reasonable rates.

See ad on page 43.

Rothsay
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www.rothsay.ca

Rothsay is one of Canada’s largest rendering companies, providing service in seven out of the 10 provinces. Rothsay operates six rendering facilities and one biodiesel facility. Their rendering operations consist of edible, prohibited, and non-prohibited rendering as well as waste cooking oil processing.

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See ad on page 45.

Scan American Corporation
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Scan American Corporation is a 30-year-old company that specializes in representing unique technology to solve the challenging needs of the rendering industry. They can solve problems with a team that represents the best technology found across the globe: Babcock Wanson thermal oxidizers; Harburg-Freudenberger Maschinebau GmbH presses; SEM Stalindustri a/s lamella and piston pumps, prebreakers, grinders, and dump and holding bins; Scansteel specialty high-capacity grinders and emulsifiers; Jimco water and air treatment; and Envikraft waste-to-energy systems.

See ad on page 3.

Separators, Inc.
(800) 233-9022
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Separators, Inc., is North America’s leading centrifuge service provider specializing in the remanufacturing of Alfa Laval, Tetra Pak, and Westfalia centrifuge equipment. In addition, Separators offers a full complement of start-up, maintenance, and repair services and stocks over 4,000 parts with 24 hours a day/7 days a week availability. Industries served include rendering, edible oils, dairy, beverage, pharmaceutical, biofuels, and industrial fluids.

Continued on page 22
Summit Trailer Sales, Inc.
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The Gavilon Group, LLC
(402) 889-4000 www.gavilon.com
The Gavilon Group, LLC, headquartered in Omaha, NE, is a leading provider of essential commodities and related services for grains and oilseeds, feed and food ingredients, fertilizer, and energy products moving through the global supply chain.

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Travis thanks you for your support!
See ad on page 7.

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Wellens has been an active member of the NRA since the mid-1960s. This affiliation facilitates a win/win relationship with leaders in the industry. With change accelerating in agri-business, the company remains totally committed to the rendering business.


The NRA wishes to thank all the sponsors and exhibitors who so generously contributed to the success of this year’s convention. The continual support of the industry is much appreciated.

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Elections and Reopening of China Market
Loom on the Horizon

As you receive this issue of *Render* magazine, the United States will be less than one month from its mid-term elections. I don’t know about you, but it can’t come too soon. Even for dedicated political junkies, of whom I do not consider myself one, it has been a long and divisive year.

All polls and other political gauges are predicting a good year for the Republicans. If the Republicans are successful in taking the majority in the House of Representatives, and maybe the Senate, we can expect some major changes. It might mean nothing will get done for another two years or there might be some bipartisanship legislation accomplished. I doubt much of the latter will get done, but in either case, things will change.

The Republicans are talking about repealing “Obamacare,” which will be unlikely unless there is a veto-proof Congress. Republicans will be expected to reduce spending, one reason why most voters will have elected them. However, this will not be easily done. Politically, it is difficult to undo programs already in place. Every program has advocates that will be fighting to keep them, including renderers. The U.S. Department of Agriculture (USDA) Foreign Market Development program and Market Access Program (MAP) are good examples. The National Renderers Association (NRA) has been a beneficiary of these export development programs for over 50 years and they have proven to be successful and cost-effective. USDA studies show that for every MAP dollar spent, there is a $30 return. These programs require an industry cost share for organizations such as the NRA to qualify.

Research spending is another area that will be scrutinized. Agriculture research is always on the cutting block and some energy related tax credits will be debated. These are all areas the rendering industry has benefited from.

There is little doubt that any government spending, except maybe for defense, will be spared debate and scrutiny in the upcoming 112th Congress. If renderers want these programs that benefit them to continue, the industry will have to be at the table and be heard. The saying, “out of sight, out of mind” will never be truer. The NRA’s 2011 Washington fly-in could be the most important ever.

A more conservative shift in Congress will also likely slow down the regulatory juggernaut. The threat with this will be just how far the Obama administration will go with rulemaking on its own. The Environmental Protection Agency and USDA have already been accused of going far beyond congressional intent in some of its rulemaking this past year.

Don’t expect President Barack Obama to just sit back and take what a potentially Republican-controlled Congress sends him. The veto pen is very powerful, and he will still have leverage to make some things happen.

On Wednesday, November 3, 2010, the presidential race for 2012 will begin in earnest. By the end of this year, the country will have a pretty good idea of all of the Republicans who intend to challenge President Obama. I wouldn’t be surprised to see some Democrats surface to challenge the president in his own party.

China Tallow Market

China, the second largest importer of animal fats in the world, still bans the import of tallow from the United States due to unjustified bovine spongiform encephalopathy (BSE) concerns. China is the only country that NRA is aware of that bans the importation of U.S. tallow for industrial purposes. For several years the NRA has attempted to open the tallow market into China. USDA officials in the United States and in China have worked with NRA to open the market.

In August 2010, Chinese officials announced, “According to the legislations and regulations of People’s Republic of China, recommended by OIE tallow safety guidelines, supported by scientific risk assessment, China allows tallow (a maximum level of 0.15 percent insoluble impurities by weight) and relative products in BSE countries that meet requirements of AQSIO, to be imported for industrial uses starting from the day of the announcement release.”

Hence, China is ready to negotiate with USDA on import requirements for U.S. tallow. This is good news for both U.S. and Canadian renderers. NRA is working with USDA to hopefully make this happen.

USDA Undersecretary Jim Miller traveled to China in mid-September to discuss a number of trade issues with Chinese officials. NRA visited with and provided Miller with information on U.S. tallow and a briefing on the potential market. NRA Asian Director Peng Li is also engaged with the Chinese and U.S. embassy officials, providing them with important information on the U.S. rendering industry.

Let’s hope all these efforts pay off in the near future. R

Reference:
1. Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ) of the People’s Republic of China.
Soybean Oil
Rape Seed / Canola Oil
Sunflower Oil
Palm Oil
Jatropha Oil
Camelina Oil
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www.bdi-bioenergy.com
The Air Force’s ongoing alternative fuels certification efforts reached a new milestone on August 27, 2010, when a C-17 Globemaster III from Edwards Air Force Base (AFB), CA, flew on all engines using jet fuel blended with a combination of traditional petroleum-based jet fuel, or JP-8, biofuel derived in part from animal fat, and synthetic fuel derived from coal.

The 418th Flight Test Squadron (FLTS) at Edwards conducted the flight test over five days. The flight was a first for any Department of Defense aircraft where a 50 percent mix of JP-8 was blended with 25 percent renewable biofuel and 25 percent fuel derived from the Fischer-Tropsch process, essentially liquefied coal or natural gas. It was also the first time an aircraft from Edwards had used fuel derived from beef tallow.

“The C-17 fleet is the biggest Air Force consumer of jet fuel annually,” said Lieutenant General Mark Shackelford, military deputy, Office of the Assistant Secretary of the Air Force for Acquisition. “This is a big step forward in achieving the Air Force’s energy goal of increasing the available supply of fuel by acquiring half of the Air Force’s domestic jet fuel requirement from domestically derived, environmentally friendly alternative sources by 2016.”

For several years the Air Force has been looking at alternate sources of fuel to support their operations, said James Holther, 418 FLTS project engineer for biofuel testing.

“The first thing the Air Force did was look at Fischer-Tropsch fuels that use natural gas or coal as the feedstock and this is just a continuation of that ongoing effort,” he said. “The fuel we’re testing this time around is a biofuel manufactured with biomass as the feedstock.”

The hydro-treated renewable jet fuel, or HRJ, used by the C-17 contains biomass that can be made from either animal fats or plant extracts such as camelina, a weed-like plant not used for food. The HRJ is blended with regular JP-8 jet fuel for the testing to gather data to support Air Force transport aircraft certification on alternative fuels from various feedstocks.

A C-17 in flight.
Canadian Companies Team Up to Boost Biodiesel

A new strategic partnership between Rothsay Biodiesel, a division of Maple Leaf Foods, Inc., and petroleum distributor FS Partners, will deliver blended biodiesel to Rothsay’s fleets in Ontario, Canada, and provide the infrastructure to expand the use of Rothsay’s blended biodiesel into other Maple Leaf Foods’ fleets in the future. Previously, Rothsay would do the blending at each of their sites.

The new partnership considerably enhances Rothsay’s blending and distribution capabilities and expands the availability of biodiesel blended fuels to the marketplace.

“There have been very few petroleum distributors who have offered biodiesel, let alone Canadian-based biodiesel,” said Todd Moser, vice president, Alternative Fuels, Rothsay. “This relationship makes this more of a reality.”

Clemson Engineering Gets Biofuel Equipment

A new piece of equipment for the Clemson University biosystems engineering program will help researchers conduct novel research on new biomass sources, such as algae and fungi.

“The new $125,000 mobile biofuels processing plant delivered from Piedmont Biofuels in North Carolina is a state-of-the-art pilot facility that will not only give us a valuable research tool for working with plants, microbes, and waste oils, but also will be useful to demonstrate biofuels production for local producers, bioenergy industrial partners, and to the public,” said biosystems engineer Terry Walker. The plant had an initial successful run in early September using waste algal and sunflower oils from Martek Biosciences in Kingstree, SC. The biofuel was then used to cycle back to a generator to achieve net-zero production.

The plant is being developed to convert waste oils to high-grade biodiesel. Walker said support for the purchase came from many sources, including Clemson Public Service Activities; the College of Agriculture,
Biofuels Continued from page 27

Forestry, and Life Sciences and others at Clemson University in Clemson, SC; Piedmont Biofuels in Pittsboro, NC; and SunStor, Inc., in Greer, SC.

The new mobile facility will be showcased at the annual biomass meeting this fall at the Pee Dee Research and Education Center. The meeting is being sponsored by Clemson University, the South Carolina State Energy Office, and the Biomass Council.

Europe Investigating Claim of U.S. Biodiesel Circumvention

The European Commission (EC) has formally launched another investigation into U.S. biodiesel exports to the European Union (EU), this time after the European Biodiesel Board (EBB) filed a complaint in June 2010 that the European biodiesel industry “is still being injured by cheap biodiesel imports from the United States that are circumventing anti-dumping and countervailing measures put in place last year.”

In March 2009, the EC began imposing provisional duties that later became permanent tariffs for five years on imported U.S. biodiesel following an investigation into U.S. biofuels that began in June 2008 after EBB filed a complaint claiming that for more than two years, U.S. biodiesel was sold in Europe at a substantial discount, even lower than vegetable oil feedstocks purchased by the EU industry for producing biodiesel. EBB is now claiming that soon after March 2009, new patterns in the transatlantic biodiesel trade emerged, with U.S. biodiesel being increasingly exported to the EU via third countries, in particular Canada and Singapore, in order to “fraudulently conceal its U.S. origin.” EBB states that U.S. biodiesel is still being exported directly to the EU in the form of blends not covered by tariffs, typically as a 19 percent biodiesel-diesel blend.

“These practices do not reflect normal commercial practices but are a mere attempt to evade the anti-dumping and countervailing duties,” EBB commented in a press release.

In March 2010, Italian customs authorities seized a large quantity of biodiesel in the port of Venice out of an import of 10,000 tons of biodiesel. The product was declared as of Canadian origin, but EBB claims its “extremely low price signaled it’s likely U.S. origin. The product was named offered with a $150 to $180 per ton discount compared to EU biodiesel of comparable quality, and at a lower price than soybean oil and rapeseed oil. Material evidences converge to indicate that the biodiesel load seized in Venice is part of wider trans-shipment traffic aimed at evading existing EU anti-dumping and anti-subsidy measures on U.S. biodiesel.”

Massachusetts Biodiesel Plant Breaks Ground

In August, Northeast Biodiesel held a groundbreaking ceremony for its new biodiesel plant in Greenfield, MA, that will produce 3.5 million gallons of biodiesel from recycled cooking oil beginning January 2011. The company is investing $2.5 million in the facility and will hire 13 staff to operate the plant. Indirect jobs supported by the plant will include construction and facility maintenance, collectors of recycled cooking oil from local restaurants, biofuel blended home heating oil delivery, and trucking to bring in the recycled oil and other raw materials and to distribute the company’s finished product.

Northeast Biodiesel is a limited liability corporation with Co-op Power as the majority owner. Co-op Power is a sustainable energy cooperative owned by consumers in New England and New York, primarily in Massachusetts. There are 20 other investors who have invested capital in the company.

Montana Awards Alternative Energy Grants

The Montana Department of Environmental Quality (DEQ) has awarded $1 million in grants to four entities for projects that will further the development and marketability of renewable energy technologies in the state. The grants are funded with federal recovery dollars.

The four grant applications scored highest among the 15 that were submitted. Among the recipients was Opportunity Link, an economic development agency, which was awarded $125,000 to develop railroad markets for biodiesel. The agency, based in Havre, MT, has organized a partnership between BNSF Railway Company and the Montana State University-Northern Bio-Energy Center to demonstrate the use of a 20 percent biodiesel blend (B20) in a locomotive switch engine. BNSF has agreed to use B20 in a switch engine for one year. Part of the grant will be used by Opportunity Link to coordinate emissions testing and to analyze filters and engine components at the end of the operating period. The test data will be compared to an identical engine operating on conventional fuels over the same period of time.

A $25,000 grant was awarded to Earl Fisher, a Chester-based oilseed processor and biodiesel refinery, to provide more efficient oilseed crushing capacity. The grant will be used to purchase additional oilseed crushing equipment to expand capacity of the plant. The object of the grant is to lower the cost of biodiesel for the Opportunity Link project and to tie into a regional market for biodiesel.

Larger grants were awarded for wind energy ($500,000) and a commercial-scale algae green house that will convert waste wood chips into an organic fertilizer ($350,000).

New York City to Require Biodiesel in Heating Oil

Starting in October 2012, all heating oil sold within New York City, NY, will contain at least two percent biodiesel, as per a bill signed into law in mid-August by Mayor Michael Bloomberg. The blend is known as Bioheat, an alternative fuel that is gaining popularity in Northeastern and Mid-Atlantic states.

“New York City consumes one billion gallons of heating oil annually, more than any other city in the United States,” said City Councilman James F. Gennaro, who sponsored the legislation. “This will annually replace 20 million gallons of petroleum with an equal volume of renewable, sustainable, domestically produced biodiesel.”

The legislation also limits sulfur in petroleum-based heating oil, which complements a new state law signed in July by Governor David Patterson.

Sprague Energy, a biodiesel and petroleum distributor located in New York State, helped champion the legislation. Metro Fuel Oil Corp., Inc., a large fuel distributor located in the New York City area, is scheduled to
open a biodiesel plant in Brooklyn in 2011 that will process used cooking oil from restaurants in New York City into biodiesel.

REG Re-opens Seneca Plant, Acquires New Mexico Facility

In mid-August, Renewable Energy Group (REG) celebrated the re-opening of its 60 million gallon per year biodiesel production and glycerin refining facility in Seneca, IL, formerly owned by Nova Biosource Fuels. REG acquired the plant in April 2010 out of Nova’s bankruptcy.

The facility has three side-by-side 20 million gallon per year biodiesel process units, of which two are currently operating using a variety of raw materials, from inedible corn oil to used cooking oil, vegetable oil, and animal fats. Also on-site is a technical grade glycerin refining facility, raw material and finished product storage, as well as rail car and truck unloading and loading with the potential for barge transportation. Prior to REG’s involvement, the facility had been idle for more than a year.

In late September, REG and ARES Corporation announced REG will acquire biodiesel assets in Clovis, NM, from ARES who will concurrently invest an additional $8 million into REG in an all common stock transaction. ARES Corporation of Burlingame, CA – an engineering, risk management, software/information technology, and project management company – owned the 15 million gallon per year facility.

“In support of RFS2 [Renewable Fuel Standard 2], REG continues to expand its national footprint of production facilities and related logistics to better serve our growing customer base of regional and national businesses,” said Daniel J. Oh, REG president and chief operating officer. “We consider this position in the Southwest to be a long-term, strategic move for our company.”

Wisconsin Biodiesel Producer Receives Grant

Sun Power Biodiesel, LLC, has received over $1.1 million in financial assistance to purchase equipment, use as working capital, and support efforts to create 31 jobs and retain four jobs. The assistance includes $800,000 in American Recovery and Reinvestment Act funds provided to Sun Power Biodiesel through Wisconsin’s State Energy Program. The state is also awarding a $349,825 Community Development Block Grant-Public Facilities for Economic Development grant to the City of Cumberland to provide project infrastructure improvements, including water mains, sanitary sewer, storm sewer, street construction (including curb and gutter), electric installation, and lighting.

Sun Power Biodiesel is a small biodiesel producer that originally designed its plant to use canola as a feedstock, but apparently is now using mostly yellow grease. The company, which was founded in 2005 and began operations in 2008, operates one plant and has the ability to produce up to three million gallons annually. The company’s chief executive officer told news sources that the facility has endured intermittent operations due to various industry challenges, such as the lapse of a tax credit and modifications to ASTM International biodiesel standards.
Setting a Standard for Triglycerides as Fuel

The use of triglycerides as fuel goes back to biblical times when lamps used vegetable oil or animal fats as a fuel. Into the 1800s, whale oil was a valued component of the fishing industry for lamp lighting in homes near coastal waters. These oils were considered too valuable for use for heating since wood, peat, or coal were considered so plentiful and inexpensive that they became the preferred fuel for heating of homes.

The discovery of liquid petroleum products and the development of pipeline transportation changed the economies and along with natural gas became the primary components of direct and indirect heat and light for the twentieth century. It took a global conflict to renew interest in triglycerides as fuel, followed by multiple global economic crises to change public opinion from a passing interest to a need for regulatory approvals. Subsequently, the U.S. Environmental Protection Agency began the regulation of air and water quality and was given legal authority on emissions requirements over commercial and industrial businesses. Greater interest in air and water quality was paralleled in countries around the world.

Extensive work done by individual Fats and Protein Research Foundation (FPRF) members in the late 1990s to offset the high prices of fuels for burners and the relative low prices for rendered fats and oils began a new era in triglyceride fuels. These efforts to place a floor price on fats, oils, and greases based on the British thermal unit, or BTU, values were the key to survival in the rendering industry and the basis for new research. Several companies researched their equipment, state and federal laws on permits, and stack emissions and followed up with testing to prove the value of those fuels for use in boilers. That data was used to show regulatory compliance individually.

Subsequently in 2002, three entities combined resources for an extensive test run under controlled circumstances. This was jointly funded by the Poultry Protein and Fat Council of the U.S. Poultry and Egg Association, the University of Georgia, and FPRF. The University of Georgia fueled their boilers through an entire heating season to understand the longer term effects on equipment. That study, published in the public domain, provided validity and practical information for additional businesses to look beyond the waste petroleum burners for additional undervalued products to offset high fuel costs. The issue still remained that it was largely driven by individual businesses willing to proceed with the required testing for their circumstance, equipment, and the product available in their area. The approvals for use were limited to the range of specification of fats, oils, and greases actually used in the testing. Valuable follow-up research contributions to provide appropriate credibility to the research done by individual companies came from many areas, including the American Oil Chemists’ Society (AOCS), U.S. Department of Agriculture’s Agricultural Research Service, and Department of Energy’s National Research Energy Laboratory.

This set up the need for industrial boiler equipment that can be tested and approved for the fuels the owner intends to burn. Underwriters Laboratory (UL) and subsequent industrial insurers desired to have descriptions and specifications set for these triglyceride fuels to enable them to pre-test and certify those burners and equipment for that purpose. ASTM International agreed to begin the process of reviewing and proposing standards for a product category for triglyceride fuels.

The product category was determined to fall under the control of recycled products, Subcommittee P, and was assigned to a working group for definition in 2008 at the ASTM meeting in Arizona. It was determined by the working group that general standards existed and with the data available, the specifications could be set for an introductory product category. Since there is extensive data from the AOCS and members of the National Renderers Association on yellow grease, the specifications of those products are being used as the platform to gain recognition of the product for burner fuels. Companies who have tested and been approved to use triglyceride fuels in their burners can submit data on the specifications of the product as validation for the creation of the standards.

While additional rendered products or product classifications might have limited experience or anecdotal experience, it is important that there are fully documented product classifications setting standards referenced as fit for purpose. These standards must apply to a large range of types of equipment and manufacturers to be considered acceptable for consensus approval. The success of an individual specification in only one or two types of equipment will not convince the larger body of ASTM to approve that specification.

An example of an acceptable statement of scope for the need and defense of a standard might be stated as follows:

“This standard is the result of a request from the Used Oil Management Association (a U.S. trade group) to develop a specification that defines and classifies triglyceride burner fuels. At the time of the request, high energy prices and demand for renewable burner fuels were driving the increased use of innovative fuels intended for use in small industrial and commercial heating systems and for which standards did not exist. In particular, industrial users were rewriting air permits to include yellow grease as a fuel and small commercial operations were using triglycerides for fuel.

“This standard is intended to define triglyceride fuels for regulators; provide a trading standard for fuel processors, buyers, and sellers; and standardize these fuel types for heating and other equipment manufacturers.”

It is important to understand the function of ASTM – they do not approve or disapprove of any material, product, process, etc. They do set standards for uniform evaluation of those materials, products, and processes for open marketplace trade. The standards are voluntary; they only become mandatory when cited in regulation or are specified in commercial contractual transactions. Standards are developed and established
using consensus principles involving a balance of stakeholders. The rules for voting balance are that the number of general interest members plus users plus consumers must be greater than the number of producers in the makeup of main committees or subcommittees. Unofficial voting members are not counted in this balance; the votes at each ballot are not required to be balanced, as long as the available and active membership is balanced. ASTM members must be active and voting or they are dropped from membership and replaced to maintain the appropriate balance to offset competing interests.

Producing companies may have more than one member attend the meetings and act as unofficial voting members who can participate in all meetings, but may not vote in ballot adjudication, except if they carry the voting member’s proxy specific to that subcommittee or main committee. Each producer entity is only allowed one voting member, but with multiple meetings taking place at the same time, it is normal to have multiple non-voting members attend to represent a company’s interests.

Fuel specifications are needed to standardize emerging triglyceride-based fuels and to support UL specifications for equipment using these fuels. Additionally, without a system to classify and characterize triglyceride fuels, some states are treating these fuels as waste oil resulting in additional permit requirements and administration burdens to enable burning. This work has been introduced to address these concerns by providing a standardized system of categorizing these fuels for use in commercial and industrial burners and boilers within the limits of the scope.

As a result, the ASTM working group intended to present to the subcommittee members for a vote that closed September 23, 2010, a fully developed specification for triglyceride burner fuels with the intent of taking this specification to the main committee in December for official acceptance. Once this specification is accepted, the members anticipate that additional triglyceride products will be tested and specifications developed for subsequent approval. There is a great interest in setting standards for brown grease and other categories after the approval of the first standard involving primarily yellow greases is approved.
The World Renderers Organization (WRO) Annual Meeting will be held in Naples, FL, in conjunction with the National Renderers Association Annual Convention October 26-29, 2010. Already over half of the countries making up the WRO are registered to attend the meetings. They will have a formidable agenda to discuss as the organization formalizes its plans for promoting rendered products as well as rendering itself.

Eight areas have been identified as key to WRO activities over the next half decade. They range from developing vital messages from the organization directed toward global governing bodies, regulators, current and potential new users of rendered products, and the general public, to cataloging “best practices” of the industry from around the world.

In looking at just the key area of messaging, it is instantly clear that the average person does not have even a clue about any of the nuances of the rendering industry. Renderers all know almost intuitively that there is no single industry that is as green and sustainable as rendering. Today, the industry does not have to rely on intuition or job experience, but can now prove scientifically just how sustainable it really is.

Research done by renderers and their research arms in North America, Europe, and Australia have documented the carbon footprint of the rendering industry. It can be proven that not only does rendering have a relatively small carbon footprint, but it also does a phenomenal job of sequestering carbon at the same time.

The challenge for the WRO is to take this research data and turn it into messages to appropriate audiences around the world. Decisions will need to be made on what worldwide forums are the best for each message and which ones offer the “best bang for the buck.” The WRO, like any other organization, has limited resources that it must utilize judiciously.

The list of messages goes on and on, and so too, the size of the audience gets larger and larger. Hence, the challenge of targeting messages effectively increases almost logarithmically.

Obviously as the industry provides animal feed ingredients in a world short on animal protein, this becomes a primary area of responsibility for our message. Communication needs to be directed to governments and regulatory bodies in countries that do not allow or severely restrict the feeding of rendered products. They need to be shown the safety and sustainability that rendered products offer, and told that rendered products are heat-treated, safe, and not human food competitive.

Renderers and their products are key ingredients in the recipe, “Feeding the World Population Today and Tomorrow.” Getting that word out will require the creation of a list of important individuals and institutions that influence public policy and perception. This is another of the eight key areas WRO is working to develop. That list would include regulatory authorities around the globe, politicians, industry groups in food and aquaculture, farmers, wholesalers and retailers, scientists, and educational institutions. Once identified, these entities can be matched to a customized message about the industry and its story.

Cataloging industry best practices is another of the areas WRO is working on. The Australians have had best practices standards in place for decades, while the U.S. renderers have a code of practice. Making all of these available to every renderer around the world is one of WRO’s goals. Of course every country has its nuances and requirements to meet local laws and customs, but having all of the practices in one reference makes self regulation of rendering much smoother. In addition, having the scientific basis for the practices available makes them all the more likely to be accepted by individual nations’ regulators.

Greenhouse gas calculations, along with carbon footprint data, are also being gathered by the WRO. Such tools as the carbon footprint calculator developed at the Animal Co-Products Research and Education Center at Clemson University is just one example of tools WRO intends to make available. This is another of the group’s areas of concentrated effort.

All of this and more will then have to be made available to renderers around the world as well as to the industry’s key audiences. One method of information dissemination will be the upgrading and improving of the WRO Web site (www.worldrenderers.org) to contain all of this information. Here we intend to amass all of this information as well as a catalogue of pictures.

Another means of spreading the word is through targeting specific audiences at
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The European Commission (EC) released in July 2010 The TSE Road Map 2, A Strategy Paper on Transmissible Spongiform Encephalopathies for 2010-2015, setting out possible revisions to its TSE-related legislation in the coming years. This report has been long-awaited by the rendering/animal by-products, animal feed, meat production, and farming sectors.

As expected, it contains, among other things, arguments for a partial relaxation of the total ban on the use of processed animal proteins (PAPs) in animal feed. It underlines that there are good arguments for allowing the use of non-ruminant PAPs in feeds for non-ruminant animals and fish. However, no moves will be made without full scientific evaluation or controls on the use of such PAPs being put in place. But don’t hold your breath as legislative proposals to follow up the road map ideas are not expected until 2011. Nevertheless, this new road map is a clear sign that the European Union (EU) is prepared to countenance real relaxations to the limitations on the use of PAPs in feed.

The number of bovine spongiform encephalopathy (BSE) cases in the EU fell to 67 in 2009 (compared to 125 in 2008 and 561 in 2005), with all of the cases in animals born before 2000, when the strict feed rules were deemed to be applied properly. The report concludes that in view of the downward trend of cases there is a need “to better prioritise actions towards diseases which may have a bigger impact than TSE in terms of public health and set out EU funding accordingly.”

“We’re finally on the verge of eradicating the disease in the EU,” said EU Health Commissioner John Dalli.

The road map is clear that “considering that the transmission risk of BSE from non-ruminants to non-ruminants is very unlikely, a lifting of the ban on the use of PAPs from non-ruminants in non-ruminant feed could be considered, but without lifting the existing prohibition on intra-species recycling (e.g., poultry meat and bone meal could only be fed to pigs and pig meat and bone meal to poultry). Moreover, the reintroduction of PAPs in non-ruminant feed may enable the EU to decrease the dependence on other sources of proteins.”

An EU-wide ban was introduced in January 2001 on the use of PAPs in feed for any animals farmed for food production, with only some exceptions, such as the use of fish meal for non-ruminants.

The commission stresses that the starting point when revising the current feed ban provisions “should be risk-based but at the same time should take into account the control tools in place to evaluate (i.e., the availability of a reliable test to identify the species of trace of meat and bone meal).” The introduction of a tolerance threshold level for PAPs in animal feed would need to be based on the results of an updated quantitative risk assessment, with the European Food Safety Authority (EFSA) expected to publish its opinion by the end of 2010.

In addition, the Community Reference Laboratory for animal proteins (CRL-AP) is investigating the performance of different new diagnostic methods that may identify the species (ruminant, pig, or poultry) of traces of meat and bone meal found in feed. The EC points out that mandatory treatment of mammalian proteins at 133 degrees Celsius, three bars during 20 minutes “results in very small fragments of animal proteins, which are difficult to detect by the current analytical methods.” The results of the CRL-AP study should be available before the end of this year.

Also, considering the limitations inherent in any control method, correct “channelling” of PAPs from different species “will be an important part of any review of the current feed ban provisions.” This means the feed chain may have to dedicate certain feed lines, even plants, to feed containing PAPs.

EU farming organization COPA-COECA reacted favorably to the new road map, stating that it “welcomes publication of the new TSE road map released by the EU Commission today, which highlights the positive trend in the BSE situation.” It urges the EC to ease current restrictions. The farming organization added, “We are also happy that the road map answers many of our demands on processed animal proteins and the re-inclusion of non-ruminant PAPs in non-ruminant feed avoiding intra-species recycling. The feed ban for non-ruminants could consequently be lifted. COPA-COECA calls on the Belgian presidency to make urgent progress on this in the coming months.”

The latter phrase refers to the presidency (chairmanship) of the Council of Ministers. In practice the Belgians are unlikely to be able to make much progress as the council can only make decisions on proposals for legislative changes initiated by the EC. The commission has let it be known that it will make such a proposal only when all the scientific evidence is in place.

The EC is expected to await feedback on the road map from the European Parliament and council before coming forward with legislative proposals from 2011 onwards.

Elsewhere, on the issue of specified risk materials (SRMs), the road map calls for the EU list of SRMs to be aligned with the international standards of the World Organization for Animal Health, or OIE. It also stresses the necessity of ensuring “the current level of consumer protection” by continuing to assure the safe removal of SRMs, but proposes the possible modification of the list of materials/age of animals based on new scientific opinions. EFSA is expected to come forward with a report reassessing the “pertinence of the SRM list for small
The road map proposes a possible review of the obligation to remove SRMs for those member states that benefit from a “negligible risk status” according to the OIE code. At the same time it notes that “more stringent measures” regarding SRM removal could be envisaged for those member states experiencing a slower decline in BSE cases, with the potential enforcement of a temporary embargo as a last resort.

Other areas identified by the EC where future possible changes could be made include a revision of BSE surveillance rules, enhanced measures for scrapie eradication, testing of live animals, and a relaxation of rules concerning cohort culling with a view to authorizing the slaughter of these animals for human consumption.

In terms of BSE monitoring in bovine animals, the EC envisages the continuation of a gradual increase in the age limits for testing in those member states fully complying with epidemiological criteria.

The TSE road map can be found at http://ec.europa.eu/food/food/biosafety/tse_bse/docs/roadmap_en.pdf.
Salmonella Detectives

With the recent outbreak of *Salmonella* in eggs, questions quickly arose about the source of the contamination and the culpability for the outbreak. In such an episode, it is important for the rendering industry to have data to validate safety. Dr. Xiuping Jiang, associate professor of Food Science and Microbiology and a member of the Clemson University Animal Co-Products Research and Education Center (ACREC) team, is working on ACREC-funded *Salmonella* studies as well as on several different *Salmonella*-related research projects on rendered animal co-products with the Animal Protein Producers Industry (APPI) and NP Analytical Laboratories.

In 1984, APPI initiated its *Salmonella* Reduction Education Program and a microbiological survey of animal protein meals. NP Analytical Laboratories analyzed more than 3,400 protein meal samples from 31 rendering facilities in the first five months of 2010. In reviewing the data from NP Analytical Laboratories, 257 of the samples (7.5%) were positive for *Salmonella*. Of these samples, 32 (0.9 percent) were enumerated and the isolates were identified to serotype. None of the tested samples contained the foodborne pathogens *Salmonella enteriditis* or *Salmonella typhimurium*.

Most *Salmonella* serovars are pathogenic; however, none of the serovars isolated from animal protein meals were listed as the most dangerous serovars in the recently released Food and Drug Administration (FDA) draft Compliance Policy Guide, Section 690.800, *Salmonella* in Animal Feed. The 32 *Salmonella* positive samples were shipped to Jiang’s laboratory for further analysis for antimicrobial resistance. Jiang and her team determined that approximately 94 percent of the *Salmonella* isolates from animal protein meals were susceptible to the most commonly used antibiotics.

Jiang, along with graduate student Brandon Kinley, fellow ACREC researcher Dr. Paul Dawson, and Clemson statistician Dr. James Rieck, recently published a study in the *Canadian Journal of Microbiology* that involved a survey of bacterial contamination rates in rendered animal products. Total bacterial counts as well as a number of specific bacterial species were enumerated. The researchers further studied the prevalence of *Salmonella* and enterococci in the samples. The team analyzed 150 samples (including meat and bone meal, poultry meal, feather meal, and blood meal) provided by U.S. rendering companies. Results of this study indicated moisture contents ranging from 1.9 to 11.5 percent. Total bacterial counts were reported and the researchers determined that 81.3 percent of the samples contained *Enterococcus* species. However, only 8.7 percent of the samples contained *Salmonella*.

These findings are similar to the results from NP Analytical Laboratories in which there was a 7.5 percent incidence rate of *Salmonella* in animal protein meals. Both studies indicate a considerably lower incidence of *Salmonella* in rendered products than the 17 percent rate reported in a study in 1968, the 56 percent rate reported by FDA in 1995, the 25 percent rate of *Salmonella enterica* present in samples reported by FDA in 2002, and the 25 percent rate previously reported in an earlier APPI survey. The study also indicated that poultry and feather meal samples were more likely to contain *Salmonella* than other protein meals. Further study by Jiang and Kinley indicated that *Salmonella* was not persistent in the plant’s environment over time and the presence of *Salmonella* in finished protein meal products may be due to post-process contamination. Jiang’s study was conducted on meals collected directly from the end of the processing line in the rendering facility as compared to the samples in the FDA studies that were transported and subjected to secondary contamination prior to sample collection.

Jiang and Kinley continued their study by testing six *Salmonella* isolates for thermal resistance. The researchers determined that all *Salmonella* isolates from animal protein meals had D values within nine minutes at 55 degrees Celsius.
had a low heat resistance, since the inherent spots within the cooking system. Also, Salmonella rendering process should destroy all in the study. This indicated that the thermal conditions used exceeds the thermal treatment in the rendering cooker far exceeds the thermal conditions used in the study. This indicated that the rendering process should destroy all Salmonella, provided there are no cold spots within the cooking system. Also, since the inherent Salmonella in the meals had a low heat resistance, Salmonella contamination was most likely due to post-process contamination.

Low incidence of Salmonella and absence of E. coli in all of the animal protein meal samples indicate the rendering industry is doing a good job of destroying microorganisms in its processing. The study was of importance in providing baseline microbiological data for fresh rendered protein meals and because the samples were collected from production lines prior to transport to and mixing with other feed components in a feed mill, the results are more accurate in representing microbial load than previous studies.

Jiang reported that use of heat resistant enterococci could be useful as a marker to determine adequate heating and/or post process contamination of products. Enterococcus species is a common bacterium that is found in the environment and in animals and has been previously reported in animal protein meals. The organism is heat tolerant and, therefore, presence of this organism in 81.3 percent of the samples is not surprising. Previous studies by FDA have indicated similar results. Enterococci are used to indicate the presence of antimicrobial resistance genes. The two resistance genes (vanA and vanB) associated with plasmids have been reported as conferring high vancomycin resistance. In the study, Jiang and her team determined that none of the enterococci isolates from animal protein meals contained either vanA or vanB genes, indicating a low potential for vancomycin-resistant genes transferring from the enterococci in the meal to other species in the product.

In other studies, Jiang is continuing her work on producing bacteriophages against Salmonella for large scale application to animal protein meals and to treat processing environments. Bacteriophages are viruses that are specific to bacterial species and are capable of quickly killing host bacteria. Bacteriophages are self-replicating antimicrobials that are safe to humans, animals, and plants since they are only capable of affecting specific host bacteria. Jiang’s team has isolated bacteriophages capable of destroying Salmonella.

The project is now moving into studies on how to efficiently produce large volumes of the bacteriophages and subsequent purification. Results of Jiang’s project indicate that this biological control method has potential for reducing Salmonella populations within the rendering processing plant environment and in animal proteins. The study also indicates that the bacteriophages may protect products against future Salmonella contamination and may be effective in reducing Salmonella infection in animals who consume the bacteriophages.

Jiang and her research team are microbiological detectives on the trail of Salmonella knowledge related to rendered products. Their ultimate goal is to eliminate Salmonella from these materials. The data gathered by Jiang and her team is rapidly increasing the database of knowledge concerning the microbial world of rendered products. This knowledge will help improve the biosafety of these materials and help protect the industry from biosecurity issues.

References:
Seven Electrical Safety Habits for a Safer Workplace

Fact: One person is electrocuted every day in the workplace.

Fact: More people in the 25- to 44-year-old age group are electrocuted in the workplace than any other age group.

The above statistics are sobering, surprising, and worrisome. Every employer wants to protect their employees in the work environment, but it is often a matter of “how can we make the workplace safer” rather than “do I really need to make it safer.” Employers will do what they can to ensure workers are safe, and they want to know what can be done to make that happen.

This article covers seven habits that will make the workplace safe for electrical work. The article is far too short to be specific, but it covers the topic in general based on the authors’ training and accident investigation experience. It helps set the direction and closes with several specific steps an employer can take to make the workplace electrically safer. Statistics show that if these seven electrical safety habits are followed, electrical incidents are greatly reduced if not eliminated.

Habit 1 – Always Verify Absence of Voltage and Use Insulating Gloves and Tools

This habit is listed first because it is crucial. No one should even consider touching any circuit part or conductor unless they have verified that it has no voltage on it. Follow the routine “test before touch” using the “live-dead-live” rule. First, apply a voltage tester to a known live circuit and verify that the tester reads voltage. Then test the circuit part or conductor that will be worked on. To make certain the tester is still functioning, again apply the tester to the original known live circuit and verify it is still functioning.

The second part of this habit is to always use insulating gloves. This does not mean leather gloves, but rubber insulating gloves that are the proper voltage class and have been tested (testing must occur after six months of use or one year if the gloves are stored properly). A corollary to this habit is using insulating tools when tools may make accidental contact with circuit parts or conductors that may be energized.

Habit 2 – Establish Boundaries for Worker Safety from Shock and Arc Flash Hazards

Employers should use the available national consensus standards published by the National Fire Protection Association (NFPA). They publish two standards particularly addressing electrical hazards.

The first standard is NFPA 70, the National Electrical Code (NEC). This standard addresses the design, installation, and inspection of electrical equipment and systems. The second standard is NFPA 70E, the Standard for Electrical Safety in the Workplace. For example, to find the working space required around electrical equipment, employers can check the NEC. To find the shock and arc flash protection boundaries, check the 70E standard. The NEC requires equipment be labeled for arc flash and shock hazards.

Shock protection boundaries are determined by the voltages encountered while arc flash protection boundaries are determined by the amount of energy available to the electrical equipment and the time the arc flash will take to clear. The arc flash boundary is the distance where unprotected skin may experience the onset of second degree burns during...
an arc flash incident. At or below 600 volts, if the power distribution meets certain criteria, employers can use four feet for the arc flash protection boundary.

Habit 3 – Always Wear Arc-rated Daily Wear and a Face Shield

References to arc-rated clothing may be in terms of flame resistant clothing, but not all flame resistant clothing is arc rated. When verifying that flame resistant clothing is arc-rated, check for a calorie per cubic centimeter squared (cal/cm²) rating, a hazard/risk category rating, and a reference to ASTM International F1506 standard. If it doesn’t have any or at least one of these statements on the clothing tag, it may not be arc rated. All arc-rated clothing is flame resistant but not all flame resistant clothing is arc rated.

Common cotton clothing and clothing made of poly-blends is not arc rated or flame resistant. Chances of surviving body burns are dramatically increased using arc-rated clothing. Studies of electrical arc flash incidents have shown that the worse incidents were caused by clothing catching fire. Other studies confirm that it is less costly to dress employees in arc-rated clothing than paying for their recovery medical costs. Wearing cotton undergarments is acceptable in many cases but arc-rated undergarments are available. Undergarments or any garments worn under arc-rated clothing that are a poly-blend or made of synthetic melting materials are expressly prohibited in NFPA 70E and in Occupational Safety and Health Administration (OSHA) Standards, 29 Code of Federal Regulations, Part 1910.269, Electric Power Generation, Transmission, and Distribution.

Habit 4 – Always Use a GFCI with Cord- and Plug-connected Tools and Extension Cords

This habit is expressly stated in OSHA standards and became law in 2008 for all maintenance and construction work (Part 1910.304(b)(3)(ii)). Even more, since the human body is so sensitive to electrical current flowing through it, it is recommended that all persons handling cord- and plug-connected tools use leather gloves.

Habit 5 – When Feasible, Create an Electrically Safe Work Condition

NFPA’s 70E is very specific on this topic. Article 120.1 on page 19 of the standard describes the process in detail, which has been summarized below using the acronym ISOLATE:

I – Identify all energy sources and check drawings
S – Shut down sources feeding equipment
O – Open disconnect switch or circuit breaker
L – LO/TO, which means apply lockout/tagout devices
A – Assure contacts are open, visually when possible
T – Test/Verify all phase and neutral zero/test tester
E – Employ safety grounds for high voltage where necessary

These steps are clear and necessary to establish an electrically safe work condition, yet keep in mind three issues when considering this process.

1. The process of creating an electrically safe work condition is

Continued on page 40
dangerous. Approaching circuit parts or conductors that may be energized is inherently unsafe. Electrical hazards are not visible to the naked eye.

2. Wearing the proper personal protective equipment (PPE) does not create an electrically safe work condition. In fact, PPE is not even mentioned in the seven steps listed above. The process assumes the person establishing an electrically safe work condition is wearing the appropriate PPE until the process is complete.

3. The evaluation of every electrical incident will ultimately find that one of more of the steps listed above was not completed. Electrical incidents are preventable. Establishing an electrically safe condition eliminates shock and arc flash hazards.

Habit 6 – Identify Higher Hazard Levels and Adopt Proper PPE or Engineering Controls to Mitigate Those Hazards

The most common “greater hazard” is arc flash. NFPA 70E has several articles that require a shock and arc flash hazard analysis be performed (Article 110.8 and 130.3). Typically, the employer retains a firm that performs the analysis, gathering data and using computer software to analyze the hazards. NFPA 70E provides for two exceptions to performing calculations. The first is an arc flash hazard analysis does not need to be performed for circuits that are 240 volts or lower and the transformers supplying those circuits are less than 125 kilovolt ampere.

The second exception is when the employer chooses to use the tables contained in 70E. If so chosen, the electrical power distribution systems need to meet certain criteria as listed in the 70E standard footnotes.

After the analysis by any of the above methods, the employer shall label the electrical equipment giving warnings regarding the hazards. The NEC and NFPA 70 require all electrical equipment be labeled with a warning stating that an electrical arc flash hazard exists and recommends using the NFPA 70E process. NFPA 70E requires that the label include the arc flash exposure be stated in cal/cm², or the hazard/risk category of clothing stated in 0-4, or both.

Label requirements in 2011 are expected to increase with a little more detail.

Habit 7 - Measure, Audit, and Continuously Improve Electrical Safety Processes

Obviously, implementing electrical safety habits will not be successful unless someone follows up and makes certain proper and safe activities happen. NFPA 70E requires annual auditing of electrical safety practices in the workplace by management or someone delegated by management. Optimizing the hierarchy of your controls will ensure an effective electrical safety program.

• Eliminate the hazard by de-energizing, then locking and tagging out the circuit parts or conductors. Then visualize and verify that, indeed, the circuit parts and conductors are de-energized.
• Use engineering controls and design out and remove the exposure to the hazard.
• Use administrative controls and perform labeling, training, safe work practices, and work plans, and establish a live electrical work permit program.

Conclusion

Below is a list of steps that establish a basis and encourage implementing the seven electrical habits listed above.

1. Attend NFPA 70E training.
2. Provide 70E training for employees.
4. Conduct a hazard analysis study.
5. Label equipment.
6. Select the appropriate PPE.
7. Develop an electrical safety program.
8. Audit for compliance.
9. Review program annually.
10. Determine a hazard mitigation strategy.

Practicing the seven electrical safety habits will go a long way in making a workplace safer.

About the Authors

Al Havens has more than 40 years of electrical safety experience, 26 of which as senior electrical engineer for U.S. Gypsum. He currently provides instruction in the application and use of the NFPA 70E standard in both low- and high-voltage environments.

Hugh Hoagland is among the world’s foremost experts on electrical arc testing and safety. He has helped develop most of the arc-resistant rainwear used in the world today as well as creating the first face shield to protect against electric arcs. Hoagland sits on several electrical industry committees, is a featured speaker at safety conferences and events, and provides training and consulting.
FDA Releases Draft Compliance Guide on Salmonella in Animal Feed

The Food and Drug Administration (FDA) published a draft Compliance Policy Guide, Section 690.800, Salmonella in Animal Feed, in the August 2, 2010, Federal Register. The draft guidance document, when finalized, will help guide FDA staff’s regulatory policy relating to animal feed or feed ingredients that are contaminated with Salmonella and that come in direct contact with humans, such as pet food and pet treats.

FDA states in the draft guide that Salmonella in pet food will be deemed to be adulterated as it is handled in the home and can be pathogenic to those people handling it. For other animal feeds, only those feeds containing pathogenic Salmonella for animals will be considered adulterants, or only if contact with humans is likely to be a problem. According to the National Renderers Association, this appears to support the way FDA’s Center for Veterinary Medicine has been interpreting Salmonella regulation.


On a related matter, FDA published a review of the first seven months of its Reportable Food Registry, which is available at www.fda.gov/Food/FoodSafety/FoodSafetyPrograms/RFR/ucm200958.htm.

States Receive Feed Inspection Funding

The Food and Drug Administration (FDA) recently awarded $3 million in direct and indirect costs to 12 states to conduct feed inspections related to bovine spongiform encephalopathy (BSE) regulations for fiscal year 2010. An additional four years of funding will be available depending upon federal fiscal year appropriations and successful performance of the states.

The cooperative agreements with FDA will provide up to $250,000 per year for all costs incurred by the 12 U.S. states related to ensuring cattle feed produced and used in each state does not contain prohibitive material per FDA regulations. The states receiving the funding are Colorado, Florida, Illinois, Iowa, Kansas, Kentucky, Michigan, Nebraska, New York, North Carolina, Texas, and Washington.

The FDA has prohibited the use of ruminant protein in feed for cattle and other ruminant animals since 1997 in an effort to prevent the spread of BSE. For years, FDA has contracted with state inspectors to inspect feed mills and feed manufacturing plants. For example, over the past two years under a similar agreement, the Illinois Department of Agriculture has completed 300 on-farm inspections and 100 non-farm inspections with more than 1,000 cattle feed samples collected and analyzed.
Editor’s Note – Mark A. Lies II is a partner with the Chicago, IL, law firm of Seyfarth Shaw, LLP. He specializes in occupational safety and health and related personal injury and employment law litigation. Legal topics provide general information, not specific legal advice. Individual circumstances may limit or modify this information.

Because electricity is present in every workplace, employers must focus on this potential hazard every time there is a power outage, equipment servicing and maintenance, and modification of equipment and distribution systems. Because of the hazards of working around electricity, particularly when it is necessary to work on an electrical system that is “live,” the Occupational Safety and Health Administration (OSHA) has addressed these hazards with a wide variety of regulations, including:

- lockout/tagout (LOTO) (29 Code of Federal Regulations (CFR) 1910.147);
- electrical safety work practices (29 CFR 1910.331-336); and

As this article will discuss, these referenced regulations do not provide detailed guidance on the selection and use of PPE to protect employees against electrical shock and arc flash that may accidentally occur when performing work on live electrical currents. However, the National Fire Protection Association (NFPA) has issued a national consensus standard, NFPA 70E, that deals with electrical safety in the workplace that employers must now consider and adopt when their employees are performing such work.

OSHA has begun to issue citations based upon the requirements of NFPA 70E. Moreover, an employer who fails to consider and conform to these requirements places itself at risk for liability for negligence when an accident occurs and results in serious injury or death.

OSHA Citations and Existing Regulations

One of the areas where OSHA has issued a significant number of citations involves the interface between the OSHA LOTO regulations and requirements of NFPA 70E, specifically when employees are “de-energizing” electrical equipment and verifying after that the equipment is in a zero energy state following the LOTO procedure by using a voltmeter or other test equipment before the employee commences work on the equipment. The agency considers the process of de-energizing and verifying a zero energy state to be “live” electrical work, requiring the employee to be provided with appropriate training and PPE under NFPA 70E. Many employers are unaware of this requirement. Unfortunately, a number of employees have been seriously injured or killed by arc flash and arc blast because they were not properly trained and equipped while performing this function.

Current OSHA electrical safety regulations can be found in Subpart S of the OSHA General Industry Regulations (29 CFR 1910). OSHA has also adapted electrical safety regulations for the construction industry (29 CFR 1926.400, et seq.). These regulations have required employers to determine which, if any, of their employees perform work on live or potentially live circuits of 50 volts or more. Those workers who have a potential exposure to energized conductors, such as during maintenance, installation, and testing activities, are required to be “qualified” workers. OSHA defines a qualified worker as one who has training in avoiding the electrical hazards of working on or near exposed energized parts.

In addition to requiring workers to be trained, OSHA has established criteria for electrical safe work practices. These work practices specify a number of requirements for performing LOTO (29 CFR 1910.147), working near energized equipment, limitations for non-qualified workers, working in confined spaces, working near overhead electrical lines, using ladders, use of measuring and other test equipment, and for other activities. When performing some of these duties, OSHA regulations have required qualified workers to use “electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed.” This equipment is also required to be “maintained in a safe, reliable condition and shall be periodically inspected or tested.”

The current regulations in Subpart S, however, do not contain clear requirements for the selection and use of PPE. Some of these requirements can be found in Subpart I - Personal Protective Equipment. For example, Section 1910.132(d) of this subpart, Hazard Assessment and Equipment Selection, requires employers to conduct a hazard assessment for the use of PPE, including electrical protective equipment. Further, Section 1910.137, Electrical Protective Devices, provides requirements for the selection of some of the devices that are needed for personal protection from electrical shock (insulating blankets, covers, hoses, sleeves, and gloves). Devices that are needed for electrical arc flash protection have not been specified in Subpart S or I.

National Electrical Code

The National Electrical Code (NEC) is a national consensus standard that provides guidance on safe electrical installations, work practices, and PPE. The NEC is published by the NFPA and is also known by the document reference of NFPA 70. The portion of this NEC that deals with electrical safety in the workplace is NFPA 70E. OSHA is utilizing the version of that publication (2009) that contains a great deal of guidance on the selection and use of PPE for protection from electrical shock and arc flash. NFPA 70E is considered by OSHA to be a nationally recognized...
industry practice that employers must comply with and are subject to citation for non-compliance.

**NFPA 70E**

The guidance provided in NFPA 70E will significantly impact every workplace that has workers who are or should be qualified electrical workers. When a worker approaches an exposed live part of 50 volts or more, the guidance directs that he/she be provided with appropriate shock and arc flash hazard protective equipment. NFPA 70E establishes specific distances and levels of PPE that are to be followed by qualified and non-qualified workers. The equipment that has to be provided will depend on the voltage, current, and type of task being performed.

In the absence of more specific standards provided by OSHA, many employers have chosen to follow the guidance provided in NFPA 70E to demonstrate compliance with the requirements of Subpart S. In choosing to follow the guidance in NFPA 70E, employers will likely have to provide and require the use of electrical insulating gloves, fire resistant clothing, arc flash hoods, and other protective equipment by their qualified workers. Employers following NFPA 70E will also be required to perform an electrical hazard analysis to determine the potential for electrical shock and flash hazard. The results of these analyses will determine the requirements for the use of PPE.

The NFPA 70E is extensive and beyond the scope of this article, but the key elements of the standard include the following.

- Use of LOTO for electrical work unless the circumstances require that work on “live,” “electrically energized” equipment must be performed. The employer must be prepared to demonstrate that LOTO (de-energization and zero energy state) could not have been utilized by an employee, thus eliminating the exposure to the hazard.
- If work must be performed in a “live” energized state (and OSHA considers verification of a zero energy state after the LOTO procedure is utilized to be live electrical work), workers performing tasks in or near the energized electrical equipment are protected against contact with electrical parts (shock hazard) and from the potential intense heat and extreme pressure (arc flash/blast) that can be generated as a result of unintentional contact or arcing with energized equipment.
- Development of a formal process to perform such work that includes the use of a “written permit” before performing live work to verify that LOTO was not in fact feasible, and if not, that the necessary actions have been taken to perform work on live equipment.
- Confirmation that the employees who perform the work are qualified and authorized to perform the work. Conversely, “unqualified” employees are not to be assigned to such work. If the employer utilizes outside contractors as the qualified employees, the expertise and experience with live high voltage exposure must be confirmed.
- The safe “approach boundaries” to the energized equipment while working on or near the equipment must be determined. These boundaries will need to be calculated and will vary depending on the potential severity of an arc flash or blast if one should occur, using reference tables and formulas in the standard.
- The employer must utilize signage and labels on electrical systems to ensure that employees are warned and receive information regarding the hazards of shock and arc flash.
- Workers must also be protected through the use of specified non-conductive tools and PPE (including flame-resistant clothing).
- As in all standards, there are detailed requirements for employee training and education for both qualified and unqualified employees.

**Conclusion**

The NFPA is a well-respected professional association and it is not surprising that OSHA has endorsed NFPA 70E as part of its compliance strategy. More importantly, whether OSHA had endorsed the standard, it has been recognized across the United States as creating a legal duty for any entity that decides to allow its employees or contractors to work in or near live energized electrical equipment and must be followed unless another equivalent standard of care is followed. R
Caito Family Mourns Loss
Long-time seafood processor John Antone Caito passed away peacefully at his home on August 14, 2010, surrounded by his family. He was 83 years old.

Caito enlisted in the U.S. Navy in 1944. After serving in the Navy, he joined his father at Noyo River Fish Company in Fort Bragg, CA. Working closely with his father for 10 years, Caito and his family opened Del Monte Fishing Company in Richmond, CA, which was the last commercial whaling station in the United States. With the success of the whaling business, Caito and his family then opened and operated Pacific Rendering Company along with the Martinelli family. During that time, he was secretary/treasurer of Western California Fish Company with his father and uncles.

In 1975, Caito and his three sons opened Caito Fisheries, Inc., at the same location as Noyo River Fish Company. During his career, he also worked with Modesto Tallow Company, served as president of the Pacific Coast Renderers Association from 1970 to 1972, and was co-founder of the West Coast Seafood Processors Association.

Caito is survived by his wife of 59 years, Mable, children Joe, Jim, Jeanette, and John, nine grandchildren, and a great grandson.

California Veterinarian Retires
California State Veterinarian Dr. Richard Breitmeyer retired September 30, 2010, after 26 years at the California Department of Food and Agriculture (CDFA).

“Dr. Breitmeyer leaves state service as one of the most respected animal health authorities in the nation,” said CDFA Secretary A.G. Kawamura. “His leadership in public policy is highly valued by governments and veterinary organizations alike. I want to thank him for his tireless commitment to public service. We owe him a monumental debt of gratitude.”

Breitmeyer joined CDFA in 1984 as a veterinary medical officer and has served as state veterinarian since 1993. In that role, Breitmeyer served at the executive level as California’s state, national, and international representative on all animal health issues affecting California and the nation, and was the principal advisor to the agriculture secretary for all food safety and animal health issues affecting California. Among Breitmeyer’s national leadership positions is a current term as president of the United States Animal Health Association.

Dr. Annette Whiteford has been named to replace Breitmeyer as state veterinarian. She has been with CDFA since 2001 and has served as director of the division of Animal Health and Food Safety Services since 2004. In 2002/2003, Whiteford served as area and incident commander for California’s successful fight to eradicate exotic Newcastle disease. The response involved multiple local, state, and federal agencies with up to 1,500 people on the ground at one time. She will assume the duties of state veterinarian while retaining the director position.

Whiteford received her veterinary degree in 1998 from the University of California Davis and spent three years in private practice before joining the CDFA. She also spent eight years working for business firms in the private sector before choosing to enter veterinary school.

Cargill to Rebuild Pennsylvania Feed Facility
Cargill will rebuild its feed mill in Chambersburg, PA, that was destroyed by a fire on February 12, 2010. The mill, known as the Letterkenny Feed Depot, burned to the ground in the early morning hours that day. According to Cargill officials, the rebuild will include many upgrades to the mill’s capabilities.

“While the physical damage to our Letterkenny mill last winter was severe, the event could not dissuade us from recognizing the tremendous loyalty shown by regional livestock producers for our products since the fire,” said Rob Sheffer, regional general manager for Cargill Animal Nutrition. He noted that in spite of the fire, Cargill has maintained its entire customer base by providing...
service to Letterkenny customers via its other production facilities in Lebanon and Martinsburg, PA.

Construction of the new mill was to commence in September, with feed manufacturing production going online by next spring. The new mill will possess an annual production capacity in excess of 100,000 tons and be equipped with upgraded features, including a computerized batch-mixing system, and fully automated grinding and receiving systems. The facility also will have one of the most advanced short-mixing systems in the industry, featuring a computerized bar coding approach that tracks micro-ingredient levels used in preparing feed formulations.

**Dorada Poultry to Occupy Old Tyson Plant**

Dorada Poultry of Oklahoma City, OK, plans to occupy the former 180,000-square-foot Tyson Foods facility located in Ponca City, OK. The plant, which is scheduled to become operational in mid-2011, will provide chicken products to McDonald’s restaurants and is expected to employ approximately 350 employees, five days per week, 24 hours a day.

Dorada Poultry is a joint venture between the principals of Lopez Foods, Inc., of Oklahoma City, OK, the nation’s largest Hispanic-owned meat manufacturing company, and Tyson Foods, Inc., of Springdale, AR, one of the world’s largest processors and marketers of chicken, beef, and pork products.

An economic impact model developed by the Ponca City Development Authority forecasts the Dorada Poultry plant will contribute $217 million to the Ponca City community over the next 10 years.

**USDA Opens New China Trade Office**

The U.S. Department of Agriculture (USDA) has opened a new Agricultural Trade Office (ATO) in Shenyang, the capital of northwest China’s international trade hub in Liaoning Province.

“China is a vital market for U.S. agricultural products, and this new office will help exporters take advantage of rising per capita incomes and steady economic growth in the region by raising the profile of American agricultural and food products,” said USDA Secretary Tom Vilsack. The opening of this office on mainland China marks USDA’s expansion into the hub of northeast China and reflects the administration’s National Export Initiative, which aims to double American exports in the next five years. It also represents a significant hallmark as the United States progresses from the major market centers of Beijing, Guangzhou, and Shanghai, to up-and-coming emerging city markets like Shenyang and Chengdu.

China is the world’s second largest economy behind the United States and the second largest market for U.S. agricultural exports, importing roughly $13 billion worth of U.S. agricultural products in fiscal year 2009.

Along with offices in Beijing, Shanghai, Guangzhou, and Chengdu, the Shenyang office is the fifth ATO on mainland China and the 102nd overseas office staffed by USDA in 82 countries. The primary mission of ATOs is to assist in marketing and promoting U.S. agricultural, fish, and forestry products, and to assist in trade development in their respective regions. The offices provide a starting point for U.S. companies, cooperatives, farmers, and processors interested in exporting.
Mark Your Calendar

October


November

U.S. Animal Health Association Annual Meeting, November 11-17, Minneapolis, MN. Log on to www.usaha.org.


January 2011

Association of American Feed Control Officials Midyear Meeting, January 16-21, St. Pete Beach, FL. Log on to www.aaafco.org.


February


April


Have an upcoming event or meeting? Send event date, name, location, and registration contact information to Render, 2820 Birch Avenue, Camino, CA 95709, fax (530) 644-8429, or e-mail editors@rendermagazine.com.

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Fourth Generation of Dupps is Retiring

For The Dupps Company, leadership qualities have followed from one generation to the next.

John J. Dupps Sr. recognized the value of rendering, became a nationally respected expert, and investigated new protein co-products rendering technologies.

Son John J. Dupps Jr. envisioned the potential for dry rendering and, in the middle of The Great Depression, risked everything to build a business around the new technology.

His son, Jack, ascended to the company’s presidency earlier than expected due his father’s untimely death, yet he expanded the company’s manufacturing capabilities and had the vision to embrace and promote the new concept of continuous rendering.

Which brings us to the leadership of retiring President John A. Dupps Jr. Raised in the family business, John began working full time for The Dupps Company following his 1964 graduation from Notre Dame. He began his career in engineering and, over time, served in virtually all areas of the business from production to financial management and sales.

These experiences helped prepare him for the day in 1982 when Jack Dupps decided it was time for John to become president.

“We were having a board meeting,” John recalls, “And I guess my dad realized that I was ready, or should be ready, so he told the board ‘I think next year John should be president.’ I was shocked.”

Shocked, perhaps, but not unprepared. Along with the day-to-day managerial decisions he faced as president of Dupps during the next 28 years, John concentrated on three key strategies: (1) expansion into international markets; (2) continuously seeking new applications and opportunities for the company’s core capabilities; and (3) refining, evolving, and codifying the company’s philosophy.

When John started with the company, virtually all sales were made to the North American rendering industry. There were, however, occasional opportunities for foreign sales and John had a keen interest in the potential for Dupps to become a major global player. When it became clear that rendering in the United States was a mature business, John stepped up the company’s international efforts. Along the way there were successes and challenges as the global markets grappled with diverse economic issues, political realities, the threat of bovine spongiform encephalopathy, and more. Despite these concerns, international sales now account for nearly half of all the company’s revenues.

For John, the most satisfying aspect of his presidency has been growing the company while maintaining it as a family business with an extended family of employees. Many of these individuals have been with Dupps for all or much of their careers and, in some cases, more than one generation of a family has been part of the Dupps team. To John, “family” also means every Dupps customer, many of which have been with Dupps for several decades.

“We focus on making the company a good place to work and being good members of the community,” John said. “To me it’s all about how you treat people and how you run the business. It’s been ingrained in the Dupps brothers, and we do our best to instill it in our management team so they will pass it along to every employee. It is truly a family and team effort.”

John will remain active in the company as chairman of the board.

MEMORIES...

In 2011, Render magazine will be celebrating its fortieth year in publication! We will mark this milestone with a variety of articles looking back at the industry over the past 40 years.

If you have been a long-time reader of Render, we would love to hear about the most memorable topic/article you have read in the “National Magazine of Rendering” and its effect on you, be it about a certain technology, a challenge the industry has faced, an individual, a company, or a particular meeting. Please e-mail your memories to editors@rendermagazine.com by the end of this year!

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A word from your friends at Dupps Field Service

“For us, the bottom line is to be there when our customers need us. They operate Dupps equipment because it offers top performance and reliability; and it’s our job to keep it that way . . . any time, day or night.

“For the Field Service team, the most important thing is to get the customer’s system up and running properly as quickly as possible. Every minute of downtime costs money, so it’s our policy to have a service representative ready to work at a customer’s plant in 24 hours or less. That’s why we maintain the largest service department in the business, with the right tools and parts to do the job.

“Another important advantage we offer is experience. Every representative knows Dupps equipment inside and out, so we do the job right as well as quickly. Experience pays off in other ways too — we can help make sure equipment is properly maintained so it operates at peak performance, and to avoid expensive repairs down the road.

“Our motto is ‘Dupps won’t let you down’; for our team that means we’re committed to the customer, every hour of every day.”

The Dupps family includes all the dedicated and hard working employees whose efforts, loyalty and pride have made our company the best in the business. Compare our level of knowledge, experience and service with any of our competitors. When you do, we’re sure you’ll agree that Dupps is your logical choice.

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