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Moving Lab Animal Facilities

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Advance Planning and the Right Help are Keys to Success

Moving a work operation ranks very high on most peoples' lists of anxiety-producing activities. If your work takes place in a research lab, the requirements are even more exacting. And if that lab houses research animals, well, we may just be talking about one of the most sensitive moves of all.

Ideally, workplace moves are transparent to the worker. They pack up one day, arrive the next day at their destination and unpack, then get back to work. If you are a lab animal facility researcher who is three months into a six-month project that involves 2,000 rats, your move becomes a bit more complex.

This article examines the special considerations that apply to moving a lab animal facility. At least three special challenges distinguish lab animal facility moves from a typical workplace move: movement of specialized equipment, regulatory requirements governing animal and public welfare, and the need to preserve the integrity of your research. For each of these challenges, advance planning and getting the right kind of help are the keys to success.

MOVING EQUIPMENT

The modern lab animal facility is host to a vast array of equipment, tools, cages and monitoring systems which often

require highly specialized knowledge or qualifications to move. As an early step, make sure your equipment inventory is complete and up to date. If you do not have an inventory, create one. For the purposes of moving, each item should be characterized with the following information:

- Description
- Manufacturer
- Manufacturer's Serial Number
- Description of any service contract or warranty
- Dimensions
- Owner (i.e. the laboratory scientist or technician who is responsible for ensuring the equipment is operational)
- Requirements for closing calibration, powering down, disconnection, reconnection, powering up and opening calibration at the new site
- Special packing and moving requirements, including dimensions of the crated equipment
- Internal Identification Number

When a move is to take place, each and every piece of equipment should be labeled with the internal identification number, and responsibility for moving the equipment assigned, usually to the owner. One planner of a large lab move stated simply, "If it is not labeled, it does not move."

The equipment owner should decide whether the equipment is to be moved by internal staff, a manufacturer's technician or an outside mover and add that information to the inventory. Some planners suggest that

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three different color labels be used – for “movers,” “staff” and “other” to help identify who is to move what.

An accurate inventory printout can serve as a move checklist, once for outbound items and again for ensuring that all items get delivered to the destination.

At the destination site, it is important that the spaces to receive equipment are the proper size and configuration, and are equipped with the utilities they need, such as electrical, gas, vacuum, steam, etc. Hopefully, these items have been taken care of during the design and construction process, but some fine-tuning may be required and it is recommended that the receiving space be examined well enough in advance to provide time to make any needed adjustments. Send lab members to the new location in advance to check gas, electrical, water and other hook-ups. Again, the equipment inventory can be used to ensure all equipment has its own location and will fit.

Movement to a new space offers an opportunity to reduce or eliminate sources of unwanted pathogens from the research environment (see below). In cases where this is desired, the movement of equipment must include a process for sanitizing or sterilizing it just before it is placed in the new facility.

In a new facility, the potential threat to animal health imposed by construction materials – paints, adhesives, airborne particles, off-gassing of plastics, etc. – must be considered. Again, these issues are best caught during design. Some facilities use “sentinel” animals to test the habitability of a new space – usually for a 3-6 week period – before the research population is introduced.

MOVING ANIMALS

The regulations related to the transportation of animals fall into two broad categories: those aimed at preserving animal welfare and those designed to protect the public from disease or other harm.

Regulations for protecting animals derive mainly from the Animal Welfare Act (AWA), which sets specific standards for transportation of research animals. Rats, mice and birds are specifically exempted from these regulations, as are livestock

used for breeding and nutritional research. These regulations specify the size and configuration of transport enclosures, the travel environment, issues with respect to the compatibility of animals traveling together, food and water requirements, documentation, exposure to the elements, terminal facilities and other matters. The requirements are species-specific, and are administered by the U.S. Department of Agriculture (USDA).

Several other sets of regulations are designed to protect the public from the effects of diseases that might be transmitted to people or other animals (zoonosis). The National Research Council Institute for Laboratory Animal Research has recently published “Guidelines for the Humane Transportation of Research Animals” which provides a comprehensive description of the many government, trade association and international regulations regarding movement of animals. This document is viewable at <http://www.nap.edu>. Although the regulations are far too complex to even summarize here, the regulating agencies include the Centers for Disease Control, the U.S. Department of Transportation, the Food and Drug Administration and the U.S. Fish and Wildlife Service.

Most of the regulations described above relate to interstate transportation and foreign commerce. It is important to note that most states also regulate animal transportation and details may be found at the USDA web site.

MAINTAINING THE INTEGRITY OF YOUR RESEARCH

The central challenge associated with a workplace move is maintaining the uptime of the work. Research projects taking place over months or years cannot afford to start over due to a move, so the move process has to take special precautions to avoid any stress and contamination that might interfere with research projects.

Stress during transport can be minimized by following the AWA regulations described earlier, but attention must also be paid to stress at either the originating or receiving end of the move. Require your contractors to have a construction staging plan that isolates animals from the effects of construction such as noise and dust.

An especially important consideration in a lab animal facility move is your tolerance for relocated or introduced pathogens. Nearly all lab moves will want to avoid introducing new viruses, bacteria, parasites and so forth into their animal populations. Thus, any movement of animals will need to maintain at least the same standards of containment that existed in the lab, to avoid cross-contamination of colonies or contamination from outside sources.

Some lab relocations take advantage of the move to re-establish controls over the general health of their animals. The 2003 relocation of Oak Ridge National Laboratories' (ORNL) "Mouse House" took advantages of the move to rid their rodent population of all unwanted pathogens. These mice have been bred for decades to acquire specific genetic traits important to experimenters, but the lack of control over pathogens caused the mice to be undesirable to some researchers due to the presence of variables that could interfere with their work. ORNL's answer was to freeze sperm, embryos and other tissue from the genetically-tailored, but "dirty" mice and implant that material into "clean" mice at the new facility. In this way, new colonies of the genetically specialized mice could be created in a totally clean environment.

One lab animal facility expert emphasized the importance of commissioning – a formal process for bringing a facility into operation – to a successful lab move. A good commissioning program assures that all systems are working to provide the intended functions, including caging, ventilation systems and many other systems. If there are concerns about contamination at the destination site, commissioning should include a plan to sanitize or sterilize the facility. Sentinel mice and surface testing are typically used at the destination point to detect and remove pathogens. Commissioning should also include any needed training on new building systems and equipment.

It is not just the animals that require special treatment during a move. Tissues and genetic materials may require refrigeration. Chemicals and bio-hazards require handling consistent with regulatory requirements, and the transport process may have to include emergency plans and coordination with local community officials.

Security for animal moves may be important or required by law. The scheduling and routing of the transport vehicles should generally be restricted to a limited "need-to-know" list of people. Scheduling should take into account availability of the destination loading dock at the time of delivery to avoid unnecessary idle time and exposure.

THE IMPORTANCE OF PLANNING

As with most things, the best way to avoid problems associated with moving an animal lab is to *plan*. And the best way to plan is to ensure *participation*.

The planning of a move ought to start simultaneously with the design of the construction or renovation project. Many aspects of a move can be made much easier if accommodated during the design process. There are obvious things to consider like door and aisle way widths being sufficient to permit passage of incoming equipment, or a database center needing raised floors. Some things may be less obvious like the ability of an air handling system to serve a dozen fume hoods in addition to general building circulation, or the location of a gas hook-up for a piece of equipment that has not yet been delivered.

Creation of the project team should be done during the early design stages, and should be done in writing. While everyone is ultimately involved in the move, there must be a core of representatives who are charged with making sure that the interests of their constituency are met. It is critical to make it clear who each team member represents, what operations they will be responsible for and what time commitment is expected during planning and execution. Drafting a project charter helps clarify what is expected. Getting a clearly identified executive sponsor to "sign off" on the charter and team composition will prevent problems later. A project coordinator should also be ordained by the executive sponsor as having full authority to direct move-related activities.

There are many ways to structure your team, but the goal is always the same: full coverage of the lab operation. One model is to make individual research units responsible for their own moves, supported centrally by the animal husbandry staff, veterinarians, vet techs

and the relevant specialties from the facility operations groups. Other centrally supplied functions might include setting of standards, overall coordination and the procurement of move-related resources, such as architectural/engineering services, packing and moving services, decontamination, equipment installation, etc. The provision of such shared functions will typically be the responsibility of the project coordinator.

A general announcement to all lab occupants should be made early. This should be done by the lab director to make it clear the move has executive sponsorship and to identify the project coordinator. The project coordinator must make sure that all those affected are aware of the upcoming move and the reasons why it is taking place. Assure lab workers that they will be kept constantly in the loop and will be invited to help in the planning. A well-executed move avoids surprises.

OUTSIDE ASSISTANCE

Early planning should also anticipate any needed outside assistance, professional movers being perhaps the most important. When soliciting outside help, plan to specify the move in as much detail as possible. A complete and accurate equipment and furniture inventory is essential at this point. The specification should note the location of large or heavy items and the characteristics of pathways – e.g. door and aisle dimensions, floor surfaces and load-bearing capacity – leading from the equipment to the loading dock. If equipment requires de-installation and re-installation, this must be noted along with an indication of whether the mover is responsible for such work or needs to be working with a third-party.

Soliciting a moving company should be a two-step process. First, advertise well in advance a request for qualifications (RFQ). This document should specify the types of specialized work that will be required, but does not need to be detailed about quantities or timing. The RFQ enables you to separate the companies that are capable of doing the work from those who cannot.

A very important part of the RFQ should be a request to the suppliers asking them to tell you the information they need to submit a meaningful bid on your project. All too

many requests for fixed-price proposals have yielded less-than-satisfactory results because the request was not specific enough. The list of information requirements provided by the vendors can be used as a guide by your procurement specialist writing the request for proposal (RFP).

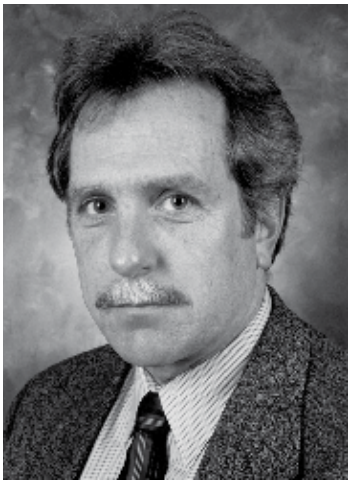
With knowledge of what a mover needs in order to provide an accurate bid, a complete inventory, and your precise timing requirements, you now have the basis for writing a tightly-specified request for proposal (RFP). You should also specify required experience with moving animals and the associated transport enclosures, along with references, insurance requirements, communications requirements and the procedures for dealing with move day contingencies. Floor plans for the origin and the destination and information about loading docks and their availability should also be included.

With specific respect to moving animals, make sure your mover has experience with the regulations that pertain to your move itinerary. Your move specification should require the carrier to handle any needed permits, fees and inspections. Don't hesitate to check with carriers' past clients to verify their credentials.

Another source of assistance can be the manufacturers of equipment you are moving. Equipment may require protection that only the manufacturer is in a position to know about or supply. The manufacturer, more likely than a mover, will be aware of special power-down, power-up requirements. There may be a need for pre-move and/or post-move calibration of instruments. In general, the same expertise required for original installation is needed to move and re-install your high-end forensic technology. Manufacturers' services can be expensive, however, so decide carefully when such help is truly needed.

With careful advance planning, inclusion of all relevant stakeholders, and tightly-specified outside assistance, the move of your lab animal facility can be pretty painless, to both you and your animals. ●

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